

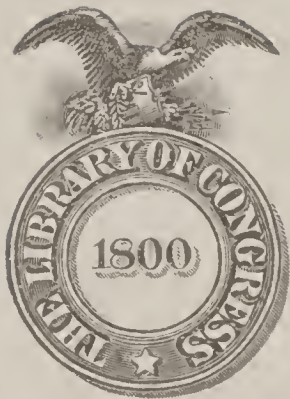
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DEPARTMENT OF COMMERCE AND LABOR

BUREAU OF FOREIGN AND DOMESTIC COMMERCE

A. H. BALDWIN, Chief

SPECIAL AGENTS SERIES—No. 67

COMMERCE AND INDUSTRIES OF
ALASKA, HAWAII, PORTO RICO,
AND THE PHILIPPINE ISLANDS

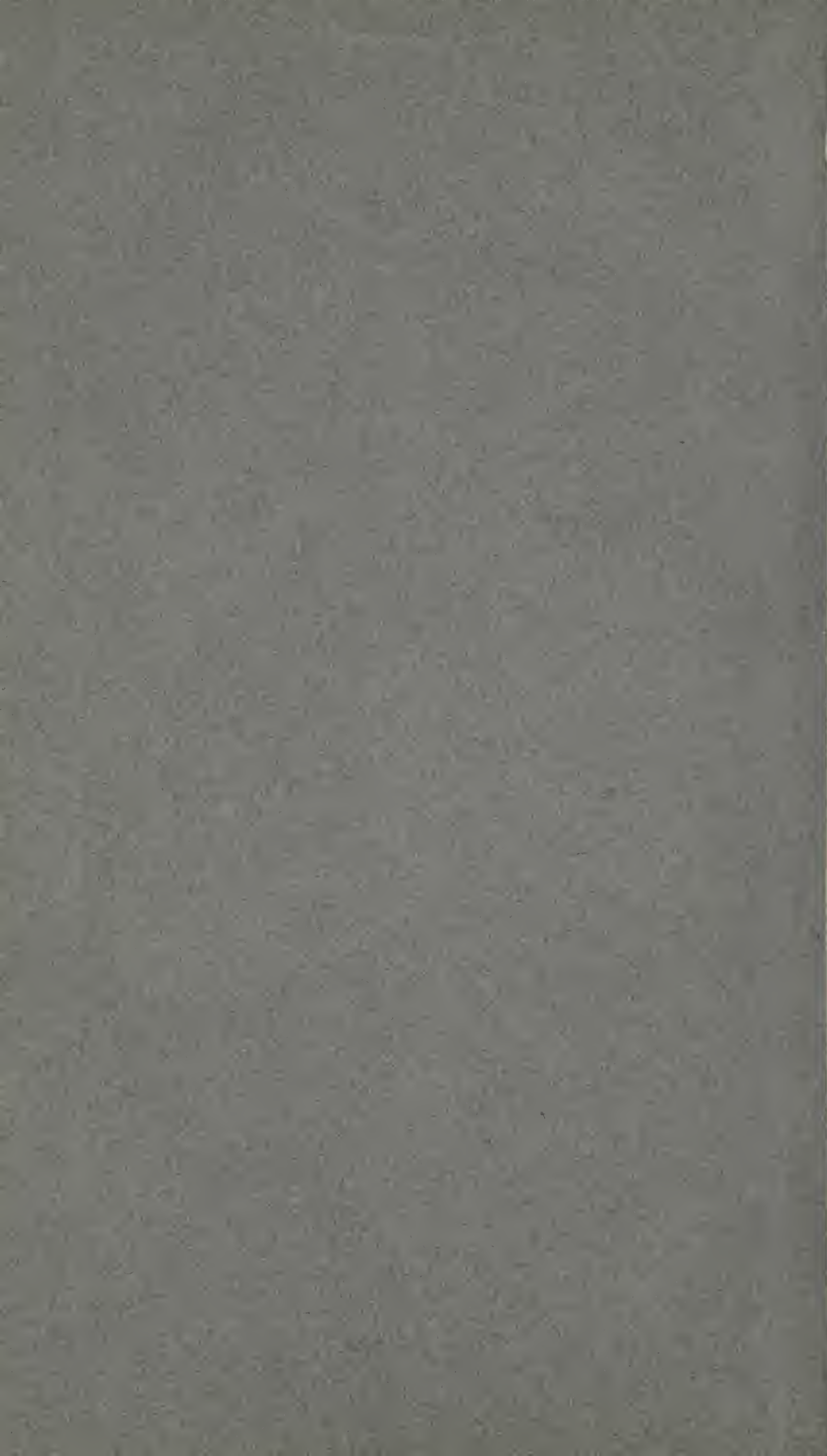
By

A. G. ROBINSON

Commercial Agent of the Department of Commerce and Labor



WASHINGTON
GOVERNMENT PRINTING OFFICE
1913



4.3. DEPARTMENT OF COMMERCE AND LABOR

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LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
BUREAU OF FOREIGN AND DOMESTIC COMMERCE,
Washington, January 11, 1913.

SIR: I have the honor to submit herewith a report by Commercial Agent A. G. Robinson on the commerce and industries of Alaska, Hawaii, Porto Rico, and the Philippine Islands. These, with Guam, Tutuila, and the Panama Canal Zone, constitute the so-called non-contiguous territory of the United States, the gross area of which is 716,517 square miles and the population about 9,000,000. The commerce of Guam and Tutuila is inconsiderable, and the commerce of the Panama Canal Zone can not easily, if at all, be separated from that of Panama. The commerce of Alaska, Hawaii, Porto Rico, and the Philippine Islands is presented in detail in Mr. Robinson's report, together with brief statements of some of the conditions and resources upon which the commerce and industry of the respective countries depend.

Respectfully,

A. H. BALDWIN,
Chief of Bureau.

TO Hon. CHARLES NAGEL,
Secretary of Commerce and Labor.

COMMERCE AND INDUSTRIES OF ALASKA, HAWAII, PORTO RICO, AND THE PHILIPPINE ISLANDS.

ALASKA.

CHRONOLOGICAL SUMMARY.—1731, Alaskan coast discovered by Gwosdeff; 1741, St. Elias region discovered by Bering; 1783, first permanent settlement on Kodiak Island; 1867, purchased from Russia for \$7,200,000; 1873, gold discovered in southeastern Alaska; 1896, gold discovered in Yukon region and Tanana Valley; 1898, gold discovered in Nome region; 1900, civil government granted; 1906, given representation in Congress through a Delegate.

GENERAL PHYSICAL CHARACTERISTICS.

The total area of Alaska is officially given as 590,884 square miles, or more than twice the area of the State of Texas. This enormous region presents widely differing conditions of topography and climate. It extends from about 900 miles south of the Arctic Circle to more than 300 miles north of that line. Its spread from east to west averages about 800 miles. Of the character of its surface, Maj. Gen. A. W. Greely, United States Army, in his Handbook of Alaska, gives the following description:

Generally speaking, the southern two fifths of Alaska consist of rugged, precipitous mountains, sometimes glacier-covered but more often densely wooded. The northern fifth is the largely treeless and barren shores of the Arctic coast. Intervening between these regions, the remaining two fifths are the watersheds of the great Yukon and the lesser Kuskokwim Rivers.

SIX GEOGRAPHICAL DISTRICTS.

Gen. Greely divides the country into six districts, as follows:

(1) Sitkan Alaska, including the mainland and outlying islands from Ketchikan northward to Skagway. "The mainland is a narrow strip, scarcely averaging 20 miles in width of available ground, overshadowed by the high, snow-capped mountains that separate Alaska from British Columbia." This district he describes as a rough and irregular surface, more or less densely wooded to the height of several hundred feet above the sea, where it is with difficulty that a square mile of fairly level land can be found.

(2) Southwestern Alaska, a region of fiords, glaciers, forests, and mountains, extending from Yakutat Bay to Cook Inlet.

(3) The Aleutian Islands, stretching "as a long, bow-shaped chain of 70 treeless islands, excluding islets, for a thousand miles from the Alaska Peninsula to the coast of Kamchatka."

(4) The Seward Peninsula, lying between Norton Sound and Kotzebue Sound on the eastern shore of Bering Strait. Here the coast forests disappear, and the low shores continue almost treeless to the Arctic Ocean. This forms a region of some 20,000 square miles in extent, where flat-topped uplands, at an elevation ranging from 800 to 2,500 feet, drain through broad valleys of the tundra type. The shores are low and sandy.

(5) The Arctic watersheds, a region including approximately 100,000 square miles and practically uninhabited. Its southern border is about 100 miles north of the Arctic Circle.

These five districts include somewhat less than half the total area of Alaska, the remainder being represented by the great central area drained by the Yukon and Kuskokwim Rivers. The Yukon has its source in the Canadian Yukon Territory, crosses the boundary at about midway of the dividing line between Canada and the United States, flows generally westward for 1,500 miles, and spills its waters into Norton Sound. At a point 150 miles or so west of the boundary it receives the water of the Porcupine River, from the northeast, and at a point about midway its course through Alaska it takes the water of the Tanana, itself a river of great length, from the southeast. The Kuskokwim drains into Bering Sea a large section of western Alaska. In this vast central region there are widely varying surface conditions, extensive areas of tundra, timberland, low hills, and mountain masses. Its resources and its industrial possibilities will be considered under special titles.

GEOLOGICAL SURVEY DESCRIPTION OF COUNTRY.

Describing Alaska, in an official report, Mr. Alfred H. Brooks, of the United States Geological Survey, says:

Two great series of ranges, the Pacific Mountain system on the south and west and the Rocky Mountain system on the north and east, traverse Alaska and divide it into three general geographic provinces. The southernmost of these provinces, here called the Pacific slope, is divided from a second province, called the central region, by a series of snow-covered ranges. This central region is separated from the third province, called the Arctic slope, by a second mountain barrier. The Pacific slope province includes the watersheds of all the streams flowing into the Pacific Ocean, and therefore a considerable part of the southern mountain system. The Pacific seaboard, except the upper part of Cook Inlet, is open to navigation throughout the year. A number of transverse valleys and low passes break the continuity of the southern mountain barrier and thus afford routes of approach to the central region. Yukon and Kuskokwim Rivers, which drain the central region, are, together with their tributaries, navigable for thousands of miles but only for the summer months. The Arctic slope is accessible along its seaboard for only a part of the summer. While the mountains which bound it on the south are broken by many passes, railway connection with an open port on the Pacific will not be commercially practicable under any conditions that can now be foreseen.

POPULATION.

In 1890 the population of Alaska was 32,052, of which number only 4,298 were classed as whites. The discovery of gold in the Yukon and the Tanana Valleys, in 1896, and in the Nome region, in 1898, brought in thousands of gold seekers and others, some of whom have established permanent homes. At present there is what may be called a floating population in addition to those of permanent residence. The breaking up of winter opens the door to thousands who come seeking gold or employment during the season and who return as the next winter approaches.

SLOW INCREASE IN POPULATION.

The population in 1900 is given as 63,592 and in 1910 as 64,356, the increase in the decade having been only 1.2 per cent. In his report for 1911, Gov. Clark states:

Any considerable increase in the population of the Territory must await a more liberal governmental policy as a whole, including a revision of the present land laws and the enactment of new ones; and, furthermore, in some measure, a more considerate attitude on the part of the press and people in the States toward the development of Alaska by highly capitalized interests. There has been no gain in population within the last year. The decennial census taken last year showed an increase as compared with the year 1900 of only 764, including both whites and natives. The total population of 64,356 is about equally divided as between whites and natives. The present density of white population is about 1 person to 19 square miles.

The very small increase in population from 1900 to 1910 is explained by the Census Bureau, thus: During the period just preceding the census of 1900, the rush of gold seekers to Alaska was such that the population as enumerated in 1900 was nearly double that reported in 1890. A considerable proportion of the population which was then enumerated (in 1900) did not remain in the Territory.

DISTRIBUTION OF POPULATION.

The Census Bureau reports the distribution of population as follows: Of the 14 incorporated towns in Alaska, 7 had a population in 1910 of 1,000 or more. Fairbanks, with 3,541 inhabitants, has the largest population, and Nome, with 2,600 inhabitants, the next largest. The population of Nome in 1900 was reported as 12,488, but this included persons on vessels in port who had been attracted by the rush to the gold fields. The total area of the territory is 590,884 square miles. The density of population per square mile in 1900 and 1910 was 0.1; that is, there is only about 1 inhabitant to 10 square miles of area.

The population of other places in 1910 was: Douglas, 1,722; Juneau, 1,644; Ketchikan, 1,613; Treadwell, 1,222; Cordova, 1,152; Skagway, 872; Valdez, 810; Wrangell, 743; Petersburg, 585; Haines, 445.

RESOURCES AND INDUSTRIES.

MINING.

While much is said of the grazing and agricultural possibilities of Alaska, its leading industries at present are mining, fishing, and fur hunting.

In his official report on the mining industry of Alaska in 1909, Mr. Alfred H. Brooks, an unquestionable authority, makes this statement:

Alaska is known to have great latent possibilities for the miner, but this mineral wealth has no value except as it be made accessible by railways and wagon roads, and much of it can be developed only by the investment of a large amount of capital for mine equipment. The exaggerated statements which have recently appeared in current literature as to the monetary value of these mineral resources are not only misleading as to fact, but also do harm by leading the people to believe that there is an equity of great immediate value for every citizen of the United States in the undeveloped wilds of Alaska. No one knows how many ounces of gold, pounds of copper, or tons of coal will eventually be won from this extensive territory. In the developed placer districts there is, to be sure, some basis for estimating gold reserves, and the surveyed portions of the coal fields give more definite results.

The total value of Alaska's mineral output for 1880 to 1912 is reported by the United States Geological Survey as approximately \$225,000,000, or some thirty times the sum paid to Russia in the purchase of the territory in 1867.

GOLD AND SILVER.

While gold was discovered in Alaska before the country came into the possession of the United States the quantity recovered was inconsiderable until nearly 20 years after the purchase. The production of the year 1880 is reported as 968 fine ounces, valued roughly at \$20,000. In the next 10 years various discoveries were made, notably the low-grade quartz ores in southeastern Alaska, developed by the Treadwell Co. The output of 1890 was valued at \$762,000. Discoveries of gold in rivers and creeks were then becoming numerous, and five years later the output showed a value of \$2,328,500. The Klondike discovery came in 1896, and was followed by a rush of gold seekers to that region. The Cape Nome discovery was made in 1898, and thousands swarmed to that region. In 1900 the Alaskan output of the yellow metal exceeded \$8,000,000 in value and more than half of it came from the vicinity of Cape Nome. Since that time other deposits have been found, the work of recovering the gold has been somewhat systematized, and the present output value is not far from \$20,000,000 yearly.

In 1911 there were 18 gold lode mines in operation, most of them in southeastern Alaska, and from these mines came about one-quarter of the total gold output. In 1910, and also in 1911, the mines of southeastern Alaska yielded gold to a value of nearly \$4,000,000. It is believed that the output of that region will be greatly increased within a few years. The material is low-grade ore, most of it free milling. Work is now being done at 1,500 to 1,800 foot levels, and the uniformity of the extraction at different levels is remarkable. Several auriferous lodes have been located elsewhere, but the importance of that branch of the industry, except on the Pacific coast, remains for determination.

The gold output of the Seward Peninsula and the Yukon Basin is practically all derived from placers. The value of the output from that source is now approximately \$12,000,000. Mr. A. H. Brooks states that it is estimated that a total of 740 placer mines were operated in Alaska in 1911, compared with 650 in 1910. About 170 mines were operated during the winter, employing about 670 men, and 775 during the summer, employing about 4,900 men. In addition to these, probably 1,000 to 1,500 men were engaged in prospecting and other nonproductive work relating to placer mining.

Some of the work is done entirely by crude hand process, some by dredging, and some by hydraulic plants. While there is still an enormous wastage, improved methods are being introduced, and, according to Mr. Brooks, these improved methods and the wide distribution of placer gold in Alaska, give assurance of a continuation of profitable mining in spite of the rapid exhaustion of the bonanza deposits. He adds that it is not to be expected, however, that the annual gold output from the placers will increase, or even hold its own, unless improved means of transportation are established.

Broadly, the placer region extends from the Canadian boundary, on the east, to Bering Sea, on the west, and from the sixty-second degree of north latitude to the sixty-sixth degree. Within these bounds are included some 200,000 square miles, only partly explored, and thus far developed only for the gold that came most easily and cheaply. In the four years, 1908 to 1911, the recovery per cubic yard

of gravel washed averaged \$3.19. The possibilities of the section under a more efficient system of operation are indicated in the fact that the average gold recovery from placer mines in the States is less than 13 cents a cubic yard.

Silver is secured as a by-product in placer and lode mining for gold. The total quantity obtained in the last 25 years shows a value of a little more than \$1,500,000.

COPPER.

Copper is found in different parts of the country, but the beds now best known are in the southeastern extremity of Alaska, north of Dixon Entrance, and in the vicinity of Prince William Sound and the Wrangell Mountains, from 50 to 250 miles west of the Canadian boundary. The extent of the deposits is, as yet, a matter of rough estimate only, but they are generally believed to contain ore in enormous quantity and of unusual richness. Comparatively little has yet been done in the development of the deposits by reason of lack of transportation facilities. Production prior to 1901 was inconsiderable. The value of the output of that year is reported as \$40,000. In the spring of 1911 a railway was completed and opened along the Copper and Chitina Rivers from Cordova, on the coast, to the Wrangell district, and shipments from that section followed immediately. The Alaskan copper output for the fiscal year 1912 was valued at \$5,000,000, or about one-half the total value reported up to the present time. The output of this immediate district will doubtless be greatly increased, and the extension of the Copper River Railway and the opening of other routes will, in time, make Alaska one of the important sources of the world's supply of copper.

COAL.

The development of Alaska's coal deposits has been retarded by legal and political activities in the matters of titles and transportation routes. That coal of good quality is there in enormous quantity is fully known, and it is also known that there is a large supply of coal of superior quality. Many guesses and estimates, more or less unreliable, have been made regarding the extent of the fields and their probable or possible tonnage content. Inasmuch as only about one-fifth of the country has been geologically surveyed, it is, as stated by Mr. Brooks, of the United States Geological Survey—

Evident that any estimate of the area of the coal fields serves only as a measure of the minimum area. With these limitations in the accuracy of the figures, the total known coal fields include an area of about 12,667 square miles. It is not impossible that future surveys may prove that the coal fields embrace many times this area.

From the various reports of the Geological Survey it appears that there is no definite information regarding the extent of the Alaskan coal fields. In estimates, the terms used are "areas believed to be underlain by workable coal," and "areas supposed to be underlain by coal-bearing rocks." The figure quoted above is for the latter of these classifications. There is, however, no doubt that the supply is enormous. Fields have been located and partly surveyed in the southern and central areas, and Mr. Brooks states that there is good reason to believe that the area of the coal fields of the Arctic slope far exceeds that of all the rest of the Alaskan fields. He reports the

condition, broadly, by stating that it is probably safe to say that the minimum estimate of Alaska's coal resources should be placed at 150,000,000,000 tons and that the actual tonnage may be many times that amount. These figures indicate coal resources far in excess of the original coal supply of Pennsylvania, but it must be remembered that over half the Alaska coal is lignite, while all of the Pennsylvania coal is of a high grade.

About one-half of the known tonnage of Alaska coal is lignite, says Mr. Brooks, a little over one-fifth is anthracite and high-grade bituminous coal, and the rest falls into the bituminous and sub-bituminous classes. It is fair to assume that these ratios will hold for the coals of the areas on which no tonnage estimates are possible. The exploitation of these deposits for market purposes is and must be in very large part a matter of a somewhat distant future. The forces by which Alaska's coal output will be regulated are, obviously, the cost of mining and transportation, the quality of the product, and the competition of other coals, of fuel oils, or of other sources of heat. Measured by possible supply, the production thus far has been quite trivial. When some of the present obstacles are removed, as they may be in the early future, there will undoubtedly be a large increase in production, but it will probably be many years before Alaska's output will form any important percentage of the total output of the United States, or play an important part in national industries outside of Alaska itself.

TIN AND OTHER MINERALS.

Stream tin was discovered on the Seward Peninsula in 1900, and a few years later cassiterite (tin oxide) was found in a place about 100 miles northwest of Nome. Since that time stream tin has been found in a number of streams in that neighborhood. Another deposit reported as promising has been located in the lower Tanana district. About all that can be said at present is that tin mining may or may not yet become an important industry. The shipment of 1910 was valued at \$8,200, of 1911 at \$6,750, and of 1912 at \$48,859.

Petroleum has been located at a number of points on the Pacific coast and there has already been some production. Of the oil from the Katalla district, near Controller Bay, Mr. Martin, of the Geological Survey, reports thus:

The petroleum is clearly a refining oil of the same general nature as the Pennsylvania petroleum. It resembles the latter in having a high proportion of the more volatile compounds and a paraffin base and in containing almost no sulphur. Oils of this character should find a special market on the Pacific seaboard, in which the fuel oils of California could not compete.

Marble, gypsum, and garnet are produced in commercial quantities in southeastern Alaska. The shipments of gypsum have averaged about \$135,000 in value for the last three years.

The important mining industries, existent and probable in the early future, are gold, coal, and copper. Hitherto a large part of Alaska's gold output has come from placer mining, an industry in which railways are a convenience rather than an absolute necessity. With railway facilities that will make possible the transportation of proper machinery, an important increase in lode mining is to be expected. With the exception of the deposits immediately on the

coast and accessible by water routes, the development of Alaska's coal and copper resources depends upon the construction of railways. The latter subject will be considered under a separate heading.

AGRICULTURE.

As agriculture depends upon heat and cold, rain and sunshine, a statement of climatic conditions is appropriate here. The main body of Alaska, exclusive of its southeastern and southwestern extensions, is approximately 900 miles from south to north, and wide variation in the local range of temperature is of course to be expected. Valdez, in the Prince William Sound district, may be used in illustration of conditions in that region. The officially reported figures for 1910 at that place give a total precipitation of 49.17 inches and a temperature variation from -4° in December to a maximum of 82° in September. At Copper Center, 70 miles or so north of Valdez and on the other side of the mountains, total precipitation for that year is reported as 8.86 inches and the range in temperature is reported as from -50° in January to 85° in July. At Tanana, on the Yukon and not far from the geographical center of the country, the precipitation was 9.52 inches, and the temperature range was from -68° in January and February to 83° in June. The conditions at Tanana are, broadly, repeated along the Yukon and Tanana Valleys in central Alaska. At Nome the precipitation is greater than in the interior and the range of temperature somewhat narrower. The 1910 maximum in Nome is given as 62° in August and the minimum as -38° in February. The conditions north of the Arctic Circle are not reported and are immaterial from the standpoint of agriculture.

The growing season in Alaska is, naturally, much shorter than in latitudes farther south, but this limitation is in considerable measure offset by a greater number of hours of sunshine in the summer months.

LAND AVAILABLE FOR AGRICULTURE.

A rough estimate by a competent authority, which is the best that can be done at present, places the Alaskan area suitable for grazing or agriculture at 30,000 square miles. A European area fairly comparable with Alaska in point of latitude, and to some extent comparable in other ways, is found in Finland, with its population of about 3,000,000 people, who produce a large part of their own food requirements and export a considerable surplus. The soil of Alaska's possible areas of cultivation is responsibly declared to be better than that of Finland. There is little probability that Alaska will draw any numerically important farm population from the fields of the United States proper, where agriculture is a far less strenuous occupation than it is in the Yukon and Tanana Valleys, but where there are arable acres and a demand for products there will be farmers from somewhere to cultivate the ground and to supply the demand.

The grazing and the agricultural possibilities of the country are as yet in an experimental stage. Many, having no knowledge of the region, regard it as a frozen waste threaded by gold-bearing streams and bordered by waters from which are taken fish and seals. It has, however, long been known to those of more accurate information that in the summer months there are found in many sections wild flowers

and berries in great abundance. It has been known that there are wide expanses of grass that grows shoulder high. More than 10 years ago Mr. Georgeson, an agent of the Department of Agriculture, reported "a tangle of luxuriant vegetation, large forests, and such delicacies as wild raspberries, red currants, huckleberries, and cranberries in profusion." For about 20 years the Department of Agriculture, although on a somewhat limited scale, has maintained experiment stations in different parts of the country.

CENSUS RETURNS ON AGRICULTURE.

While farming is not yet an extensive industry, there has been a marked growth in recent years. The official census of 1900 shows, for Alaska, 12 farms with an aggregate of 159 acres, the total farm wealth being given as \$15,686, of which \$2,196 was represented by live stock, \$690 by implements and machinery, and the remainder by land, buildings, etc. The returns for 1910 show 222 farms, with a total acreage of 42,544, valued at \$1,468,402, represented by \$464,832 in land, \$402,806 in buildings, \$58,568 in implements and machinery, and \$542,196 in domestic animals and poultry.

It is improbable that Alaska's agricultural resources will ever do more than supply a part of the local food requirement. The available information regarding the matter comes from the experiment stations of the Department of Agriculture, and these, from lack of adequate appropriations, are able to carry on their work only in a comparatively small way.

WORK OF EXPERIMENT STATIONS.

At the Sitka station numerous tests are being made in the line of vegetables, such as potatoes, beets, cabbage, onions, turnips, peas, radishes, and a dozen more. The official in charge of the station reports that the potato is the chief vegetable crop in Alaska. It is of more value by far than any other single kind of vegetable. Potatoes can be grown successfully in all parts of Alaska, even north of the Arctic Circle, when proper locations are selected, but success depends upon several things, the soil, the location as to exposure to the sun and freedom from frost, the variety of potato, and the method of culture. Considerable success is shown in such products as cauliflower, cabbage, mustard, kale, and parsley. At the interior stations, at Rampart and Fairbanks, special attention is given to experiments in grain crops, to wheat, oats, and barley. The agent at Rampart reports that what is needed is a variety of grain which will mature fully in 90 days between the date of seeding and the date of harvest, and which shall at the same time be a good yielder, produce a large, plump grain, and have a stiff straw which can withstand the occasional heavy storms without lodging. Thus far the experiments have been encouraging rather than highly successful.

In the report of the experiments at the Fairbanks station, in 1910, the following statement is made:

Generally speaking, Alaska soils hold but a limited supply of available plant food. They soon become exhausted, and the problem is how to increase this limited store of plant food. There are two ways. One is to raise a crop on the land only every other year and summer fallow in the intervening years. That is to say, give nature time to act upon the soil and gradually change the plant food in the soil from its insoluble to a soluble form. The other method is to apply fertilizers, and as far as interior Alaska is concerned this will be an expensive form of maintaining fertility. Stable manure, the best of all fertilizers, can be had in only limited quantities.

While it is possible that experiments will reveal varieties of plants and vegetables better suited to Alaskan conditions than those now known, there seems no reason to regard Alaska as a source of food supply sufficient even for its local needs. There are, however, some highly competent students and observers whose view of future possibilities is optimistic almost to the point of enthusiasm. There is no doubt that a large variety of vegetables and some grains will grow throughout a considerable part of the country, but the production of more than a few of them on a commercial scale seems quite doubtful at present.

FISHERIES.

In output value Alaska's fisheries stand next to gold mining. Prior to the fiscal year 1903 figures of Alaska's commerce were mere estimates. Since that time a record of the trade has been kept officially. The exports of fish to the United States during the last 10 fiscal years were as follows:

Years.	Value.	Years.	Value.
1903.....	\$8,512,642	1908.....	\$8,932,116
1904.....	9,040,780	1909.....	10,824,950
1905.....	9,010,089	1910.....	10,404,807
1906.....	7,249,428	1911.....	11,175,712
1907.....	9,145,250	1912.....	14,300,240

The Bureau of Fisheries reports that the number of persons engaged in the fisheries of Alaska in 1911 was 17,932, an increase of 2,312 over the number so engaged in 1910. Of these, 7,619 were whites, 4,642 Indians, 2,553 Japanese, 2,466 Chinese, and the rest Hawaiians, Filipinos, Porto Ricans, Mexicans, etc.

The bureau also reports that the total investment in the fisheries of Alaska, exclusive of that in the vessel fisheries for offshore cod and halibut, is \$22,671,387, an increase of \$1,959,965, as compared with 1910. Of this amount \$19,931,215 is invested in the salmon canning business, and \$623,126 in salting and mild curing salmon; \$1,194,073 in the halibut fishery; \$295,220 in the herring fishery, and \$215,670 in the central Alaska cod fishery. It is thus seen that over 90 per cent of the capital engaged in the inshore fisheries in the Territory is employed in the various branches of salmon packing. The investment in salmon canning in 1911 exceeds that of 1910 by \$1,590,466; this is attributable largely to the 13 new plants established in 1911. The quantity of apparatus used increased quite materially, also due largely to the increase in the number of plants operating.

SALMON.

The salmon fisheries are the most important, and the catch of those fish by seines, traps, gill nets, and other devices for recent calendar years is reported by the Bureau of Fisheries as follows:

Species.	1907	1908	1909	1910	1911
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Coho, or silver.....	5,360,550	4,416,498	3,526,404	5,980,104	10,002,967
Dog, or chum.....	14,744,136	18,066,576	9,456,048	18,754,280	22,811,084
Humpback, or pink.....	50,674,888	60,424,620	37,965,928	42,891,864	71,369,541
King, or spring.....	7,211,468	5,757,246	8,959,544	9,075,946	9,249,892
Red, or sockeye.....	95,835,550	124,713,630	115,120,670	96,013,880	94,202,690
Total.....	173,826,592	213,378,570	175,028,594	172,716,074	207,636,174

The Alaskan salmon fisheries are under the jurisdiction of the United States Government. Including fishermen, shoresmen, and transporters, the industry gave employment, in 1911, to 14,786 persons, of whom 5,854 were whites, 3,301 Indians, 2,520 Japanese, 2,459 Chinese, and the remainder miscellaneous. In that year there were 64 canneries in operation, one-half of them in southeast Alaska. There were employed 154 steamers and launches over 5 tons, 63 under 5 tons, and 50 sailing vessels employed in transporting supplies and for other purposes. The total investment in the industry was, in 1911, a little less than \$20,000,000. The total pay roll was about \$4,000,000, and the total value of output was \$14,600,000. In its report for 1911 the Bureau of Fisheries states that under any circumstances only the most conservative investment of new capital in the salmon-canning industry would seem wise, for new establishments must of necessity either only divide the catch at present made, to the possible destruction of the margin of profit and loss of both new and old investment, or overtax the productivity of the industry by overfishing, with the result of destroying the supply before the newly invested capital can be realized upon.

COD, HALIBUT, AND HERRING.

The cod industry is only indifferently developed, but gives large promise of expansion in the future. In 1911, the total investment amounted to \$215,670. The catch amounted to 3,597,288 pounds of prepared products, valued at \$108,790. Much the larger part was shipped as salted cod. In addition to the local industry, cod fishing is carried on by a fleet having headquarters in California and Puget Sound. The bureau reports that, in 1911, the vessels from Washington operating in Alaskan waters caught 1,101,000 fish, with a cured weight of 5,378,000 pounds, valued at \$161,340, while those from California caught 466,000 fish, with a cured weight of 2,330,000 pounds, valued at \$69,900.

As a commercial product, halibut ranks next to salmon in Alaska's fishery industry. The work is carried on from headquarters in Alaska and by a considerable fleet from Puget Sound. The greater portion of the Pacific coast halibut is shipped, in ice, to points east of the Mississippi River, Chicago, New York, and Boston being the principal distributing centers. The Alaskan industry, as distinct from the Puget Sound fleet, employed, in 1911, 651 persons, about 80 per cent of whom were whites. The prepared weight of the catch amounted to 17,315,171 pounds, and it was valued at \$822,362. The bureau reports on the Puget Sound fleet as follows:

A fleet of Puget Sound power vessels visits southeast Alaska during the months from October to March, when, owing to stormy weather and a scarcity of fish, it is not safe or profitable to visit the banks near the home ports. This fleet makes its headquarters at Petersburg, Juneau, and Ketchikan, shipping the catch home from these places via the regular steamship lines. As a result of its operations in Alaska the fleet (with the exception of the steamers) caught and shipped 2,399,379 dressed pounds of fresh halibut, valued at \$118,488. The steamers carry their own catches to the Sound ports, and these have not been included in the above amount. During the summer months most of this fleet fishes on the Flattery Banks off the State of Washington, or the banks off the British Columbia coast.

The herring fisheries employed, in 1911, 265 persons, and the value of the catch was about \$201,909. The fish are used for food, bait, fertilizer, and for oil.

FUR SEAL.

The fur seals of Alaska have been for many years a highly controversial issue, involving much debate in Washington and prolonged diplomatic negotiations with foreign powers. The matter is too complex for consideration here. Briefly, it may be said that, in 1786, Gerrasim Pribilof located the group of islands, now bearing his name, as the great breeding place of the fur seal. The purchase of Alaska, in 1869, brought those islands into the possession of the United States and they were declared a special Government reservation. From 1870 to 1910 leases were granted giving, first to the Alaska Commercial Co. and later to the North American Commercial Co., the exclusive right to kill seals on these islands. But the seal is a migratory animal and wanders, in enormous herds, far from the breeding grounds. The United States, having no control of the open sea, was unable, until recently, to stop the pelagic sealing that reduced the seal herd from millions in number to a few score thousands. A treaty has now been made by which this slaughter, threatening the total extinction of the animals, will be prohibited by international agreement. With the expiration of the lease to the North American Commercial Co., a law was passed by which the killing of seals on the Pribilof Islands is placed under the immediate charge and control of the Secretary of Commerce and Labor.

From official estimates, including both the land catch and the pelagic catch, it appears that from 1870 to 1911, inclusive, the Pribilof Island herd was the source of supply of more than 3,000,000 skins. Twenty-five years ago the catch, from both land and pelagic sources, averaged about 130,000 skins a year. The take of 1910, under Government control, was 12,920 skins, sold in London for \$435,083.59, an average of \$33.68 per skin. The take of 1911 was 12,002 skins, sold for \$416,992.40, an average of \$34.74. The net proceeds of the sales of 1911 were \$385,862.28, this sum having been paid into the Treasury of the United States. Under the old leasing system the revenue to the Government would have been \$122,720.45. It is believed that under the present restrictions in the matter of killing, there will come a marked increase in the herd.

OTHER ALASKAN FURS.

Other Alaskan fur-bearing animals are the bear, beaver, ermine, fox, lynx, marten, mink, muskrat, otter (both land and sea), wolf, and wolverine. There are bears of several species, but the black bear leads the group as a source of supply of commercial furs. The beaver has been hunted with such persistence that its ultimate extinction is almost certain. There were taken, in 1905, 1,935 skins; in 1906, 1,536; in 1907, 1,159; in 1908, 1,280; in 1909, 2,323; in 1910, 2,002; and in 1911, 118. The muskrat is found in large numbers throughout the country except along the northern coast line.

The natives use the skin for clothing. The commerce in the skins is also considerable. Shipments in recent calendar years have been thus:

Years.	Skins.	Value.	Years.	Skins.	Value.
1905.....	12,599	\$1,192	1909.....	121,568	\$34,074
1906.....	3,611	302	1910.....	223,893	75,248
1907.....	6,481	498	1911.....	81,823	17,903
1908.....	31,712	6,257			

The value of the land-otter skins taken in 1911 was \$10,622, and of the sea otter, \$10,600. In that year shipments of mink skins were valued at \$77,717; marten, \$53,509; lynx, \$23,601; blue fox, \$28,035; red fox, \$48,522; silver fox, \$1,795 (10 skins); silver-gray fox, \$7,593 (72 skins); white fox, \$51,712. The hair seal is very abundant all along the coast, but plays only an insignificant part in commerce. The natives utilize the products of the animals for food, clothing, and numerous other purposes. The walrus also affords the natives both food and clothing, and its products enter into commerce to a limited extent.

By an act of Congress approved April 21, 1910, restriction or prohibition was placed on the killing of fur-bearing animals, for the purpose of maintaining and increasing the fur industry.

FOREST RESOURCES.

The Forest Service of the Department of Agriculture divides the forests of Alaska broadly into three groups—the coast forests of southern Alaska, the interior forests of the Yukon area, and an intermediate group in which the other two show overlapping. The coast group is a northward extension of the forests of British Columbia and the State of Washington, and the interior group is a westward extension of the interior Canadian forests.

The Forest Service estimates the woodland area of Alaska as approximately 100,000,000 acres, or about 27 per cent of the entire land surface. It says that about 20,000,000 acres may possibly bear timber of sufficient size or density to be considered forest in the sense that much of it can be used for saw timber, while the balance, 80,000,000 acres, is woodland which bears some saw timber, but on which the forest is of a smaller and more scattered character and valuable chiefly for fuel.

COAST FORESTS.

Nearly all of the coast forests of southern and southeastern Alaska are included in the Tongass and the Chugach National Forests. These include 26,761,626 acres, a large part of which is densely covered with woods in which hemlock, cedar, spruce, and pine are in greatest supply. There is also some growth of balsam poplar, black cottonwood, alder, birches, and willows. The Forest Service states that “practically the entire forest of the coast region is over-mature. It has been accumulating for ages, uninjured by fire or

cutting. The timber should be cut and utilized as soon as possible, and the spruce, which is more valuable than the hemlock, should be given an opportunity to increase." As lumber, the Alaskan product is reported distinctly inferior in quality to the product of Oregon and Washington. The service recommends its use for pulp wood rather than general mill purposes. At present most of the cutting is done for small sawmills supplying lumber for local use and for the manufacture of cases in which canned salmon is packed. It is estimated that the latter of these uses requires more than one-third of the entire cut.

INTERIOR FORESTS—LUMBER INDUSTRY.

The interior forests are practically all included within the drainage basins of the Yukon, Tanana, and Kuskokwim Rivers, and are woodlands rather than forests. They are estimated as covering some 80,000,000 acres, but probably not more than one-half of that area bears timber large enough either for saw logs or cord wood. In that district is found spruce, white birch, balsam poplar, black cottonwood, aspen, black spruce, and tamarack. The region is too cold for timber of large size or rapid growth and most of the cut is suitable only for firewood. At present interior Alaska depends entirely upon wood for heat, light, and power, and will so depend until transportation makes possible the use of coal.

The present condition of the lumber business is indicated by the fact that in the fiscal year 1912 Alaska sent to the United States proper wood and manufactures thereof to a value of \$8,400, and bought from the markets of this country wood and manufactures thereof valued at \$850,000. Of this sum, \$540,000 was represented by such materials as boards, planks, joists, and shingles. Prof. Fernow makes this statement: "That the value of Alaska's forest resources must increase with the development of the country needs allow of no doubt; as a field of exploitation under present economic conditions, however, it does not offer any inducements, unless it be that the spruce could be turned into paper pulp."

Commenting on forest resources and conditions, in his report for 1911, Gov. Clark said:

The forests reserves in Alaska are extensive, but the timber, generally speaking, is not of a superior quality. Of course, the timber is of great local value, especially for piling, salmon cases, rough dimension lumber, and firewood. Outside lumber competes constantly with Alaskan lumber in the local market. Not including firewood, the lumber brought into Alaska from the States for domestic consumption forms probably from 30 to 40 per cent of the whole amount of lumber consumed in the Territory. The shipment of native lumber from Alaska, except from the forest reserves (national) is prohibited by law; lumber is rarely exported and its value is insignificant.

MANUFACTURES.

Manufacturing interests represent only a very small part of the activities of the people of Alaska, and the canning and preserving of fish represents about 80 per cent of the product value of all included

by the census returns as manufactures. The following table presents a summary of all such institutions:

	1909	1904	1899
Number of establishments.....	152	82	48
Persons engaged in manufactures.....	3,479	2,164	(1)
Proprietors and firm members.....	135	31	(1)
Salaried employees.....	245	195	82
Wage earners (average number).....	3,099	1,938	2,260
Primary horsepower.....	3,975	2,946	1,071
Capital.....	\$13,060,000	\$10,685,000	\$3,569,000
Expenses.....	\$9,453,000	\$7,012,000	\$3,414,000
Services.....	\$2,328,000	\$1,418,000	\$1,493,000
Salaries.....	\$380,000	\$322,000	\$118,000
Wages.....	\$1,948,000	\$1,096,000	\$1,375,000
Materials.....	\$5,120,000	\$3,742,000	\$1,763,000
Miscellaneous.....	\$2,005,000	\$1,852,000	\$158,000
Value of products.....	\$11,340,000	\$8,245,000	\$4,194,000
Value added by manufacture (value of products less cost of materials).....	\$6,220,000	\$4,503,000	\$2,431,000

¹ Figures not available.

Of the 3,099 reported wage earners in 1909, 2,717 were employed in the canneries and the preserving establishments, 131 in the lumber business, 64 in printing and publishing, and the remainder in a miscellaneous line of industries including carriage and wagon shops, confectionery, tobacco, furniture and refrigerators, leather goods, etc. The fish business represents \$9,189,982 out of the total product value of \$11,340,105. Lumber and timber represent \$400,000; malt liquors, \$176,000; foundry and machine-shop products, \$171,000; bakeries, \$141,000. Of the total number of establishments, reported as 152, 8 are bakeries, 46 are fish canning and preserving, 22 lumber and timber, 16 printing and publishing, 10 foundry and machine shops. In all, the 152 establishments represented 24 different industries. Aside from the conversion of some of its special products into commercial form, such as its forests into lumber, its fish into canned or preserved fish, and its ores into bullion, there is little probability that Alaska will ever be a manufacturing country.

TRANSPORTATION.

"The full industrial development of inland Alaska," states Mr. Alfred H. Brooks in an official report on Railway Routes from the Pacific Seaboard to Fairbanks, "can be brought about only by constructing railways to some of the open ports on the Pacific." By "inland Alaska" Mr. Brooks refers particularly to the region, including some 200,000 square miles, bounded, somewhat generally, by the Yukon on the north, by the Pacific Ocean on the south, by the international boundary on the east, and by the Alaska Range on the west. Along the Pacific seaboard, and only a few miles inland, stretches a rugged mountain system interposed as a barrier between the several open ports on the Pacific and the great interior which is the real Alaska of future occupation and commerce. The barrier is, however, effectively broken by a number of transverse valleys and low passes which form natural highways to the Tanana-Yukon country. North of the mountains railway construction is a work of no serious difficulty.

A number of possible routes have been more or less effectively studied or surveyed. Much work of great value has been done by agents of the United States Geological Survey, and much has been done by private enterprise. The Geological Survey began systematic work in 1898 and has made some investigation of every railway route now under consideration, and has published reconnoissance and detailed maps showing topography and distribution of mineral resources. The following statements and information are taken from reports made by Mr. Brooks, of the Survey.

POSSIBLE RAILWAY ROUTES TO CENTRAL ALASKA.

There are a number of possible routes of approach for railways from the Pacific to central Alaska. Those which are most important fall into three general zones: (1) From Lynn Canal by way of the Chilkat, Alsek, White, and Tanana River Basins; (2) by way of the Copper and Tanana Basins; (3) by way of Kenai Peninsula and Susitna and Tanana River Basins. Within these general zones there are several alternate routes.

The routes of the first zone, as described by Mr. Brooks, are: (1) An extension of the present White Pass and Yukon narrow-gauge line via Lake Kluane to the Tanana River; (2) from Pyramid Harbor to Fairbanks by way of the White and Tanana Valleys; and (3) the Yakutat-Alsek route to the Tanana River. In the second zone are the (1) Cordova-Fairbanks route via the Copper, Gulkana, and Delta Rivers from Cordova to Fairbanks; (2) from Valdez to Fairbanks via Marshall Pass; (3) from Valdez to Fairbanks via Thompson Pass. The first of these three routes would be approximately 410 miles in length; the second, about 377 miles; and the third, about 342 miles. A line is already in operation from Cordova, along the Copper River to the mouth of the Chitina, where it turns eastward and runs to the Kotsina-Chitina copper district. The routes from Valdez are shorter than the Cordova lines by reason of the northward location of the former city. From points south of Copper Center the Valdez routes would follow, to Fairbanks, the same route as the projected line from Cordova. From the main line or lines in this zone, branches could be run to several districts of important promise or known richness in coal, copper, and gold. The third zone includes the line already constructed by the Alaska Northern Railway, from Seward, on Resurrection Bay, northward toward the Matanuska coal fields, which the line is intended ultimately to reach. The northward extension of this line would bring it to the Tanana River at about the mouth of the Nenana, 50 miles or so from Fairbanks, which it would reach by a line of 468 miles from Seward.

There is also proposed a line from some port on the west shore of Cook Inlet to run in a generally westward direction to the Kuskokwim River. The literature of these and other proposed routes in Alaska is quite extensive, including many official reports and maps.

PRESENT FACILITIES INADEQUATE.

It is obvious that the present transportation facilities of Alaska are utterly inadequate even for present uses, and that transportation

charges impose an almost prohibitive burden on industrial enterprise. This condition is not chargeable to the greed of transporting companies, but is due to the lack of railways and supplementary roads and trails. Most of the freight for Fairbanks and its vicinity is shipped by ocean and river routes. From Seattle to St. Michael, near the mouth of the Yukon, the distance is about 2,700 miles. There the freight is transferred to river steamers for a 1,100-mile journey to Fairbanks. This route is open for only about three months in the year. Another route to central Alaska is by ocean voyage, 1,000 miles to Skagway; from thence a rail journey of 110 miles to White Horse, in Canadian territory; transfer to a Canadian river steamer to Dawson, about 460 miles; transfer at Dawson to an American steamer for a trip of 1,000 miles down the Yukon and up the Tanana to Fairbanks. Yet Fairbanks can be reached by several routes of less than 400 miles in length. It has been estimated that Alaska's annual expenditure for transportation of supplies and equipment is between \$7,000,000 and \$8,000,000, of which probably 30 per cent represents the ocean charge, more or less fixed. The remainder is for interior transportation, and probably half of it could be saved by railway construction that would also develop the general resources of the country. The need of railways, roads, and trails in Alaska is obvious and urgent.

COMMERCE.

ALASKA AS A BUYER.

The trade development of Alaska as indicated by the inward movement of merchandise appears in the following table, covering fiscal years:

Years.	From United States.	From other countries.	Total.
1879.....	\$317,000	\$4,791	\$321,791
1885.....	853,000	8,944	861,944
1890.....	1,897,000	24,577	1,921,577
1895.....	3,017,000	55,850	3,072,850
1898.....	13,682,000	175,235	13,857,235
1903.....	9,509,701	477,463	9,987,164
1904.....	10,165,110	607,355	10,772,465
1905.....	11,504,255	1,450,910	12,955,165
1906.....	14,869,827	845,291	15,715,118
1907.....	18,402,765	1,134,191	19,536,956
1908.....	16,577,903	776,974	17,354,877
1909.....	17,762,600	647,331	18,409,931
1910.....	18,670,339	619,348	19,289,687
1911.....	16,205,730	706,171	16,911,901
1912.....	19,417,227	563,503	19,980,730

The values of shipments from the United States prior to 1901 are official estimates. Since that date a record has been kept as records are kept of shipments to foreign markets. All except an inconsiderable percentage of Alaska's requirements beyond its own supply is brought from the States. About three-quarters of the foreign purchase comes from Canada, and most of the remainder comes from Asiatic Russia. The shipments from the States include a small percentage of foreign wares, thus, for 1910, \$697,692 worth; for 1911, \$469,220, and for 1912, \$607,957.

DOMESTIC SHIPMENTS TO ALASKA.

The domestic shipments from the United States to Alaska, by groups, have been as follows:

Groups.	1908	1909	1910	1911	1912
Foodstuffs in crude condition, and food animals.....	\$1,524,763	\$1,649,659	\$1,603,941	\$1,323,257	\$1,483,249
Foodstuffs partly or wholly manufactured.	4,100,918	4,960,505	5,008,657	3,859,768	4,509,401
Crude materials for use in manufacturing..	370,025	520,470	662,827	673,505	287,094
Manufactures for further use in manufacturing.....	1,909,441	1,996,194	2,135,672	1,553,333	2,181,438
Manufactures ready for consumption.....	7,976,905	7,963,173	8,497,242	8,294,843	10,261,770
Miscellaneous.....	75,524	96,444	64,308	31,804	86,318
Total.....	15,957,576	17,186,445	17,972,647	15,736,510	18,809,270

Alaska's economic dependence upon the outside world, thus far, is shown in the fact that its per capita imports amount to about \$275; that is, about \$18,000,000 for distribution among, roundly, 65,000 persons of all ages and all conditions of life. On such a basis as that the imports of the United States would amount to more than \$26,000,000,000 yearly. The condition is, of course, temporary. In time, Alaska will doubtless produce a larger percentage of its own requirements and a larger population will somewhat reduce the import average. It may, however, be predicted with safety that Alaska will at all times be an abnormally heavy importer, imports being considered in their relation to population. The people must buy from outside much of their food supply, most of their clothing, their tools, machinery, and household equipment. Foodstuffs constitute nearly one-third of their present imports. On the basis of the average purchases of the last three years, they now buy annually \$770,000 worth of breadstuffs, \$90,000 worth of fish, \$440,000 worth of fruits and nuts, \$2,150,000 worth of meat and dairy products, \$530,000 worth of vegetables, \$350,000 worth of sugar. They use \$625,000 worth of spirits, wines, and malt liquors, and consume \$550,000 worth of tobacco in various forms. They drink about \$150,000 worth of coffee and not enough tea to warrant its inclusion in the import details. They buy \$550,000 worth of woolen wearing apparel, and, in 1910, they bought \$1,000,000 worth of manufactured cotton goods while buying less than \$40,000 worth of cotton in the piece. They require about \$260,000 worth of leather boots and shoes and about \$175,000 worth of rubber footwear.

POSSIBILITY OF INCREASING TRADE.

The most striking feature of Alaska's import trade is its volume and value in their relation to the number of inhabitants. It is true the wages paid for service in Alaska are very high, but they must be high to meet the price of commodities. It is to be remembered that to the prices shown in the following table of imports there must be added a large sum for cost of transportation and something also for dealer's profits. The operation of railway lines to the interior, subject as they would be to the influence and action of the Interstate

Commerce Commission, would materially reduce transportation charges and, consequently, the cost of living, with a practically certain reduction in general wage rates. Railways would not appreciably affect the fishing industry but they would very greatly change conditions in all other industries, existent already or waiting on railway construction for their installation and operation.

According to Gov. Clark, in his official report for 1911, the present mining laws also retard the industrial development, and therefore the commerce, of Alaska. He says, "The serious defects in the general mining laws as applied to Alaska are becoming still more apparent. The existence of provisions which tend to retard development and to encourage mere speculation has often been complained of." He urges that many of the properties are held by nonresidents who have no intention to operate their claims, that "the motive to develop as a condition of ownership is entirely wanting in Alaska."

There can be no reasonable doubt that Alaska is a land of vast possibilities, that it is easily capable of affording work and wages for many times its present population. Nor can there be doubt that with the opening of its territory to settlement and its mines to operation, by means of railway lines, its purchases in the markets of this country will expand as its population increases.

FEATURES OF TRADE WITH THE UNITED STATES.

Considering in closer detail some of the various lines and articles purchased by the Alaskan people, it appears that they buy less than \$3,500 worth of agricultural implements, as a yearly average. This item fairly indicates the present status of the agricultural industry. Their imports of animals of various kinds show the limitations of the present grazing industry. Further evidence in the same direction lies in the fact of an importation of breadstuffs amounting to more than \$800,000, or about \$12.50 per capita. For lighting, they buy about \$80,000 worth of oil and \$40,000 worth of candles. In 1912 there was bought more than \$70,000 worth of patent and proprietary medicines, or a little more than \$1 per capita. Some of the local abundance of coal is now made available and purchases of that commodity have declined from \$208,000 in 1910 to \$109,000 in 1912. Imports of eggs average about \$400,000 yearly, and imports of fruit average a like amount. They buy furniture to the extent of about \$75,000 a year, or a little less than \$1.20 per capita. The figures indicate that most of their clothing is bought "ready-made," and the indication is supported by the fact that sewing machines are not bought in number sufficient to give them a separate place in the official tables. The requirement of fresh beef is about \$5 per capita and the requirement of ham and bacon about \$7. Their butter requirement is about \$7 per capita, condensed milk about \$6, and potatoes about \$3.

The list of purchases other than foodstuffs is long and varied, including articles entering into productive processes, such as mining machinery (\$534,854 in 1912), pumps and pumping machinery (\$55,834), steam and other power engines (\$324,000), dynamite (\$338,000), and cordage (\$105,000). It includes automobiles (18

in 1912) and motor boats (33 in 1912), railway cars and steel rails, telegraph and telephone apparatus, structural iron and steel in widely fluctuating amounts, and builders' hardware and tools (\$228,000 in 1912), printing presses and typewriting machines, musical instruments and phonographs, stoves and ranges, lamps and chandeliers, books and stationery, cameras and camera supplies (\$75,000), silk and soap and sugar and shingles. In fact, the requirements are generally those of all civilized communities, somewhat modified in Alaska by an environment in which there is much of the primitive and the pioneer.

The market is not susceptible to any special selling pressure. It buys for its needs whether they are in the direction of food supply or mechanical equipment. While the population is about 65,000, the actual buying population is much below that for the reason that the native population calls for comparatively little from the outside world, and that population represents about one-half of the total. There is little or no probability of any material expansion in Alaska's commerce until laws shall have been passed making possible the industrial development of the vast natural resources of the country.

PURCHASES FROM THE UNITED STATES.

A detailed statement of the purchases of Alaska from the United States during the last five fiscal years is given on the pages that follow.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Agricultural implements, and parts of.										
Animals:										
Cattle.....number..	1,721	2,672	1,654	1,205	1,558	112,049	177,150	110,277	\$1,631	\$5,284
Hogs.....do.....	849	1,075	1,167	1,022	2,036	11,127	11,165	18,414	98,087	152,491
Horses.....do.....	504	421	274	155	369	70,637	92,845	59,750	15,473	22,995
Sheep.....do.....	2,427	4,495	612	549	1,623	15,914	29,027	3,642	30,145	84,510
All other (including fowls).....do.....						16,965	13,223	11,801	6,925	11,909
Brass, and manufactures of.....						28,041	12,681	14,734	8,461	17,233
Breadstuffs:										
Bread and biscuit.....pounds..	1,015,672	1,323,759	1,402,553	1,140,985	667,681	64,930	78,102	88,348	76,985	38,251
Oats.....bushels..	423,674	393,881	349,836	274,852	332,574	206,389	213,925	208,565	135,236	164,132
Oatmeal and rolled oats.....pounds..	532,033	619,483	792,141	458,087	616,648	18,939	24,383	30,703	16,460	22,389
Rice.....do.....	939,514	1,134,537	1,166,735	890,750	847,331	33,703	58,902	54,597	36,487	42,177
Wheat flour.....barrels..	48,768	54,016	65,722	47,018	58,647	223,596	281,306	374,953	238,594	283,327
Preparations of, for table food.....						59,961	41,764	46,814	53,764	204,325
All other.....						61,639	15,476	69,318	46,448	68,986
Brooms and brushes.....						10,912	15,168	15,461	13,135	12,889
Candles.....pounds..	536,661	720,791	458,550	393,737	485,833	56,070	72,377	44,652	35,541	45,333
Cars, carriages, other vehicles, and parts of:										
Automobiles.....number..	14	6	5	1	18	13,025	13,455	13,600	850	18,524
Parts of (except tires).....						75	2,163	4,985	1,114	4,463
Cars, passenger and freight, and parts of.....						115,726	108,919	61,728	19,713	21,382
Wheelbarrows, pushcarts, and hand trucks.....						15,080	14,155	6,274	6,676	9,460
All other.....						40,284	40,418	27,321	18,684	29,407
Cement.....barrels..	6,128	3,637	5,131	3,262	3,500	18,004	9,107	12,510	8,458	7,994
Chemicals, drugs, dyes, and medicines:										
Acids.....pounds..						15,494	12,694	14,688	9,288	13,478
Baking powder.....pounds..	84,011	98,090	115,137	65,516	104,976	27,340	30,964	35,776	18,685	28,695
Medicines, patent or proprietary.....						49,714	34,906	37,694	28,738	71,325
All other.....						89,053	109,299	104,035	115,587	83,939
Clocks and watches, and parts of.....						14,368	10,375	7,434	9,023	11,865
Coal.....tons.....	25,378	27,999	33,274	30,367	18,056	171,928	172,238	208,359	175,926	108,995
Coke.....do.....	1,832	113	111	336	100	11,014	1,358	1,367	4,091	1,467
Cocoa and chocolate.....pounds..	559,721	751,997	701,602	520,420	610,608	13,807	16,881	14,538	11,008	15,481
Coffee.....pounds..						119,730	165,604	150,568	119,493	149,206
Copper, and manufactures of.....						15,882	7,244	8,664	9,360	24,229
Cotton cloths.....yards..	227,788	360,680	489,954	503,461	410,951	17,081	26,408	40,831	53,126	39,245
Cotton clothing and other wearing apparel.....						324,206	344,723	387,791	401,752	393,432
Cotton manufactures, all other.....						245,428	264,213	218,974	243,852	600,112
Dental goods.....							6,198	5,564	2,913	10,588
Earthen, stone, and china ware.....dozen..							31,088	36,571	35,276	54,275
Eggs.....	1,241,990	1,433,785	1,417,613	1,215,376	1,292,707	36,951	425,130	468,560	378,923	370,499
Explosives:										
Cartridges.....						39,476	51,744	55,406	56,791	94,044
Dynamite.....pounds..	1,692,810	348,875	2,293,775	2,451,663	2,812,754	193,004	39,978	273,200	285,454	338,687
Gunpowder.....do.....	1,086,348	2,520,230	2,632,470	848,968	33,974	126,425	333,928	279,972	89,011	6,460
All other.....						29,830	41,329	73,803	39,431	50,758

Fibers, vegetable, etc., manufactures of:

[illegible]

Included in "All other articles" prior to July 1, 1910.

²Included in "All other manufactures of india rubber" prior to July 1, 1910.

s Includes "Phonographs, graphophones, etc." in 1908 and 1909.

Articles.	Quantity.						Value.			
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Iron and steel, manufactures of—Continued.										
Nails and spikes..... pounds..	1,968,310	1,832,837	2,437,037	1,897,601	1,949,243	\$62,587	\$56,377	\$70,729	\$55,179	\$54,400
Pipes and fittings..... do.....	4,278,564	1,988,168	2,419,548	2,090,755	2,928,108	196,910	83,672	92,095	82,519	103,684
Stoves, ranges, and parts of.....	.....	.....	.....	.....	.....	103,572	76,305	68,239	70,053	76,491
All other manufactures of iron and steel.....	.....	.....	.....	.....	.....	465,190	358,717	345,405	271,225	578,629
Jewelry.....	.....	.....	.....	.....	.....	76,011	73,694	61,915	46,209	48,489
Lamps, chandeliers, etc.....	.....	.....	.....	.....	.....	18,690	15,210	17,839	11,345	35,388
Lead, manufactures of.....	.....	.....	.....	.....	.....	54,031	66,476	67,861	59,557	86,925
Leather, skins, and manufactures of:										
Leather and tanned skins.....	.....	.....	.....	.....	.....	5,473	8,299	7,780	8,541	4,092
Boots and shoes..... pairs.....	102,516	108,023	110,026	98,663	99,264	261,173	270,532	273,405	251,666	263,131
Harness and saddles.....	.....	.....	.....	.....	.....	23,132	23,610	18,885	14,423	17,348
All other.....	.....	.....	.....	.....	.....	40,429	31,728	29,342	36,399	45,588
Meat and dairy products:										
Beef, canned..... pounds.....	446,123	472,638	733,752	379,791	339,704	44,005	50,494	88,328	55,321	48,989
Beef, fresh..... do.....	3,802,667	4,448,510	3,893,205	3,576,974	2,875,630	316,020	392,371	362,573	353,863	300,281
Beef, pickled, and other cured..... do.....	262,626	315,023	513,591	317,137	350,610	18,253	22,445	34,992	28,396	32,842
Tallow..... do.....	97,534	43,342	91,760	52,568	94,890	6,677	2,950	7,205	4,016	6,932
Bacon..... do.....	1,200,613	1,427,918	1,313,450	984,725	1,250,739	197,290	248,649	262,850	220,831	243,471
Hams and shoulders..... do.....	1,657,194	1,899,817	1,597,792	1,087,270	1,224,765	248,299	293,888	275,441	197,204	219,529
Pork, canned, fresh, and pickled..... do.....	785,150	844,269	754,603	800,284	518,777	86,885	94,144	101,913	110,569	63,687
Lard..... do.....	493,916	726,173	663,356	426,425	663,146	55,001	87,429	95,005	60,080	81,510
Lard compounds and substitutes..... do.....	81,307	104,878	187,287	159,320	161,730	6,660	8,428	18,253	16,857	14,041
Mutton..... do.....	586,443	703,739	547,682	500,101	405,970	61,814	68,061	54,094	49,873	43,029
Poultry and game.....	.....	.....	.....	.....	.....	60,473	95,665	69,213	70,218	48,548
All other meat products.....	.....	.....	.....	.....	.....	70,998	86,979	100,921	63,530	193,814
Butter..... pounds.....	1,199,571	1,683,714	1,771,426	1,201,923	1,395,331	351,729	487,455	552,417	364,907	411,090
Cheese..... do.....	265,945	319,081	359,020	226,225	273,264	45,340	52,689	64,878	40,715	50,395
Milk, condensed ¹ do.....	.....	.....	4,966,206	3,550,023	4,721,643	303,677	352,488	361,860	274,577	347,482
Motor boats..... number.....	19	31	32	42	33	14,701	26,185	45,787	53,024	81,727
Musical instruments, and parts of.....	.....	.....	.....	.....	.....	48,792	28,718	26,773	37,535	26,601
Naval stores.....	.....	.....	.....	.....	.....	5,150	5,868	6,380	17,753	21,826
Oil cloth.....	.....	.....	.....	.....	.....	16,839	17,493	18,775	15,895	43,549
Oils:										
Animal..... gallons.....	1,776	1,391	2,367	1,228	2,469	1,452	1,086	1,883	1,152	1,178
Crude, mineral..... do.....	10,411,440	16,377,185	15,728,400	19,716,326	9,435,270	162,628	312,968	404,928	494,996	162,588
Naphtha, etc..... do.....	882,630	648,843	758,377	950,192	2,422,008	151,417	107,134	120,451	148,667	297,301
Illuminating oil..... do.....	594,239	592,504	604,134	510,660	527,126	104,274	116,447	90,888	81,628	73,356
Lubricating oil, etc..... do.....	108,660	87,009	88,848	122,045	121,057	38,874	35,728	38,081	41,554	45,430
Residium, etc..... do.....	.....	25,580	226,708	1,182,530	7,968,663	.....	1,684	20,132	51,320	161,690
Vegetable oils.....	.....	.....	.....	.....	.....	13,679	16,593	18,875	15,545	22,353
Paints, pigments, and varnishes.....	.....	.....	.....	.....	.....	66,256	77,502	72,589	65,433	72,394
Paper, and manufactures of:										
Books, music, maps, photographs, etc.....	.....	.....	.....	.....	.....	151,437	173,020	154,022	166,391	232,123
Paper hangings.....	.....	.....	.....	.....	.....	14,727	14,440	8,286	6,361	11,173

Writing paper and envelopes.....						49,561	51,610	53,419	35,325	31,987
All other paper.....						59,711	73,859	74,361	75,836	87,916
Phonographs, graphophones, etc., records, and materials for ²								34,017	27,560	34,627
Photographic goods ³							25,950	30,999	50,919	74,968
Silk, manufactures of.....						31,057	38,486	31,346	22,231	20,239
Soap.....						35,322	44,700	46,373	43,260	56,559
Spirits, wines, and malt liquors:										
Malt liquors.....	668,573	515,602	425,694	558,912	467,287	258,993	248,351	211,777	226,193	230,832
Spirits, distilled.....	152,900	161,272	158,447	135,890	125,538	418,735	454,405	415,968	351,124	342,511
Wines.....	59,122	43,122	32,500	34,762	43,053	55,553	37,911	27,076	27,012	29,075
Sugar, molasses, and confectionery:										
Molasses and sirup.....	37,605	68,664	60,689	33,761	45,020	30,495	53,447	50,018	25,693	37,085
Sugar, refined.....	3,664,489	6,111,255	5,522,515	4,296,000	5,014,878	205,589	347,741	319,131	241,052	287,271
Confectionery.....						55,954	57,128	59,020	70,367	75,091
Tin, manufactures of.....						52,375	168,993	177,869	395,279	995,243
Tobacco, and manufactures of:										
Unmanufactured.....	4,861	8,330	18,623	10,884	4,813	2,180	2,559	6,659	3,918	2,721
Cigars and cheroots.....	5,614	6,168	5,486	4,617	5,760	338,624	394,361	342,239	273,666	347,688
Cigarettes.....	3,314	3,931	3,227	1,679	2,617	14,760	21,535	25,335	15,343	24,494
Plug.....	212,736	221,248	230,724	159,137	151,031	94,604	102,556	106,064	73,079	70,515
Smoking ⁴			273,875	209,711	212,645	88,637	135,516	130,508	104,684	108,800
All other.....								20,780	11,570	17,487
Toys.....						11,467	36,216	44,698	29,926	7,420
Vegetables:										
Beans and dried peas.....	10,728	16,229	19,225	11,893	10,640	23,525	39,819	53,657	34,865	30,011
Onions.....	18,051	17,042	18,658	14,441	10,682	30,587	21,942	21,197	20,233	15,780
Potatoes (except sweet).....	167,440	181,568	226,581	164,250	136,514	185,240	187,613	186,512	161,363	164,387
All other (including pickles and sauces).....						293,408	349,500	325,631	264,048	318,365
Wood, and manufactures of:										
Boards, planks, deals, etc.....	19,131	23,429	22,185	13,478	22,711	293,651	310,871	334,896	213,465	343,314
Shingles.....	3,520	2,742	2,959	3,718	2,453	7,990	5,503	5,754	7,766	5,086
Shooks.....						87,317	232,265	147,314	206,107	151,813
All other lumber.....						54,220	50,720	29,605	35,986	40,308
Doors, sash and blinds.....						33,094	29,294	25,171	21,872	28,211
Furniture.....						92,025	83,708	60,651	61,351	63,312
Trimmings, moldings, etc.....						4,428	4,037	2,234	1,900	4,491
All other manufactures of wood.....						123,811	192,256	170,357	156,646	213,628
Wool, manufactures of:										
Wearing apparel.....						596,827	615,074	581,867	510,969	554,358
All other.....						100,193	90,518	83,418	76,607	55,144
Zinc, manufactures of.....						4,839	4,036	5,279	4,777	7,937
All other articles.....						338,981	311,111	326,419	167,152	182,564
Total.....						15,957,576	17,186,445	17,972,647	15,736,510	18,809,270
Shipments of foreign merchandise from the United States to Alaska.....						620,327	576,155	697,692	469,220	607,957
Grand total.....						16,577,903	17,762,600	18,670,339	16,205,730	19,417,227

¹ Quantity not stated prior to July 1, 1909.
² Included in "All other instruments and apparatus" prior to July 1, 1909.
³ Included in "All other articles" prior to July 1, 1910.
⁴ Included in "All other manufactures of tobacco" prior to July 1, 1909.

ALASKA'S FOREIGN TRADE.

The trade of Alaska with countries other than the United States is inconsiderable. The total imports of the last five years have been thus: 1908, \$776,974; 1909, \$647,331; 1910, \$619,348; 1911, \$706,171; 1912, \$563,503. Canada and Asiatic Russia are the only countries represented in the business. The transactions of the last three fiscal years have been as follows:

Articles and countries.	1910	1911	1912
FROM CANADA.			
Copper ore.....	\$139	\$33,540	\$41,857
Furs and fur skins, undressed.....	38,365	32,541	37,183
Bituminous coal.....	356,435	382,197	256,562
Articles, the growth, produce, and manufacture of the United States, returned.....	58,669	45,923	108,157
All other articles.....	77,531	51,739	42,322
Total.....	531,139	545,940	486,081
FROM ASIATIC RUSSIA.			
Furs and fur skins, undressed.....	49,808	57,249	35,837
All other articles.....	38,401	102,982	41,535
Total.....	88,209	160,231	77,422

The coal was for local use and consumption, but much of the remainder was merchandise in transit to the markets of the United States and merely recorded at its port of entry.

ALASKA'S FUTURE TRADE WITH THE UNITED STATES.

It is entirely clear that the future of Alaska's commerce depends primarily upon the installation of railways and the construction of traversable highways. Some other and extensive deposits of gold may, of course, be discovered at any time, and an influx of gold seekers follow, resulting in an appreciable trade stimulus, but the real and permanent development of trade must come from permanent industrial establishments and a material increase in the fixed resident population. Railways to the interior will make possible the operation of coal mines and copper mines, lode mining for gold, and some though probably no very great lumber industry. The mines will need their hundreds or thousands of employees, and those employees must be housed, clothed, and fed in large part by supplies brought from outside. It will be noticed that the imports of the last five years show fluctuation rather than increase, and it may be assumed that, on a basis of the same prices for the same commodities, the actual imports of 1912 did not exceed those of 1907. It may also be assumed that there will be no very material increase in Alaska's purchases until railway facilities open mines—mines require men and men require materials, food, and clothing.

There does not exist and there is not likely to come any foreign competition for the trade of Alaska. In that respect the country is on the same basis that California and Oregon are. The competition is and will be almost exclusively domestic. Alaska's requirements will come from the States, and there seems to be no reason to believe that any important part of its requirements will be supplied from strictly local sources.

ALASKA AS A SELLER.

A similar condition exists in the matter of Alaska's exports. As at present, they will in all probability be consumed in or sent abroad through the markets of the States. Including ore and bullion, Alaska's present output shows a total value of approximately \$43,000,000. Of this about \$17,000,000 is Alaskan gold and silver ore or bullion and about \$3,250,000 represents the same commodities brought across from the Canadian Yukon. Another million dollars is represented by sales of various merchandise to the people across the Canadian border, in the Yukon Territory or in British Columbia. The sum of more than \$800,000 is represented by merchandise returned to the States for one reason or another. These several items account for practically one-half of the gross exports, and the item of fish, chiefly salmon, accounts for about two-thirds of the remainder. That leaves, roughly, \$7,000,000 worth of other export products, of which in 1912 the item of copper accounts for \$5,000,000. It thus appears that out of a total strictly domestic export amounting to a little more than \$39,000,000, the three items of gold, salmon, and copper represent \$36,000,000. The greater part of the remainder is represented by fish other than salmon, furs and fur skins, and animal oils. None of these industries is susceptible, under present conditions, of any material expansion, with the possible exception of gold mining as a result of new and rich discoveries. All except an inconsiderable part of Alaska's products comes to the United States for local consumption or for shipment abroad.

SHIPMENTS TO THE UNITED STATES.

The table following shows the character and value of the shipments from Alaska to the United States during the last five fiscal years.

Articles.	Quantity.						Value.				
	1908	1909	1910	1911	1912		1908	1909	1910	1911	1912
Animals.....							\$49,317	\$20,923	\$1,305		\$50
Bones, hoofs, horns, etc.....							1,428	9,852	12,424	\$9,568	8,816
Chemicals, drugs, dyes, etc.....							1,060	4,145	3,150		
Copper ore, matte, and regulus..... gross tons	20,248	29,939	13,056	23,633	77,366		474,172	455,118	165,566	776,497	5,040,386
Curios.....									12,053	5,117	7,298
Fertilizers..... tons	653	1,473	1,464	1,777	1,695		25,713	42,046	46,826	64,925	63,479
Fish and fish products:											
Fresh, other than salmon..... pounds	5,746,440	4,879,671	6,008,458		3,684,022		205,606	209,613	292,989		176,037
Dried, smoked, or cured..... do	6,283,269	5,542,542	4,600,440	9,274,144	8,921,986		224,653	170,365	157,229	412,048	294,108
Pickled..... barrels	1,403	659	602	872	288		9,257	4,936	4,390	6,568	2,275
Salmon, canned..... pounds	100,650,132	121,333,818	115,836,591	107,646,665	132,425,658		8,125,951	9,972,316	9,435,946	10,288,547	13,210,073
All other fresh or cured salmon.....							366,649	467,397	509,910	462,510	603,214
All other fish and fish products.....								323	4,343	6,039	14,533
Furs and fur skins.....							463,108	537,162	573,704	394,485	858,431
Garnets.....									11,579	60	
Gypsum..... tons			20,480	28,147					130,795	140,935	142,125
Hides and skins other than fur skins..... pounds	177,369	198,650	33,799				17,948	19,180	3,623		
Ivory, and manufactures of.....									1,829	751	3,552
Jewelry.....							25	1,648	1,854	2,476	2,437
Leather, and manufactures of.....							8,894	8,866	1,579		
Meat and dairy products.....							5,385	7,125			
Oils, animal..... gallons	180,094	360,773	483,783	598,111	662,837		48,752	111,149	130,995	177,147	5,128
Paper, and manufactures of.....									790		201,003
Photographic goods.....								4,366	216		108
Stearin, whale..... pounds				93,296	144,425					30	3
Stone, including marble.....							17,604	55,713	43,165	3,723	6,170
Tin ore, and concentrates of..... pounds			39,000	33,600	207,800				8,200	11,026	55,300
Whalebone..... do	32,286	56,326	40,630	39,085	8,405		138,989	193,192	136,520	6,750	48,859
Wood, and manufactures of.....							101,946	77,097	9,357	113,772	20,551
All other articles.....									9,365	3,912	8,400
Articles, the growth, produce, and manufacture of the United States, returned.....							631,340	682,823	639,760	923,148	4,406
Total.....											820,965
Shipments of foreign merchandise to the United States.							10,917,797	13,055,355	12,349,462	13,813,824	21,597,712
							49,980	55,555	90,918	241,505	180,352
Grand total.....							10,967,777	13,110,910	12,440,380	14,055,329	21,778,064
GOLD AND SILVER, NOT INCLUDING COIN.											
Gold:											
Domestic ore and base bullion.....							2,400,000	2,204,766	3,234,955	2,771,780	2,719,390
Domestic bullion, refined..... ounces	503,581	864,019	862,272	685,693	815,400		9,086,293	15,354,073	15,040,479	12,309,840	14,437,599
Foreign ore and base bullion.....							804,475	95,116	175,124	75,682	61,752
Foreign bullion, refined..... ounces	92,960	146,281	226,308	226,576	199,873		1,532,863	2,369,084	3,690,854	3,634,753	3,186,169
Silver:											
Domestic ore and base bullion.....							4,662	9,451	4,652	7,608	233,167
Foreign ore and base bullion.....							7,125	14,004	11,246	15,976	11,855

EXPORTS TO FOREIGN COUNTRIES.

A part of Alaska's exports consists of local products and a part of merchandise shipped to Alaska from the States and sold across the border by local merchants. The total volume in recent years has been as follows: 1908, \$1,857,905; 1909, \$961,101; 1910, \$1,168,014; 1911, \$1,164,835; 1912, \$981,978. The larger part of the merchandise goes to Canada, to the markets of Yukon Territory, and British Columbia. The table following shows the value of the principal exports:

Articles and countries.	1910	1911	1912
TO CANADA.			
Copper ore.....	\$330,839	\$252,581	\$59,425
Fish.....	97,432	57,328	145,428
Fruits and nuts.....	28,483	31,556	41,372
Hay.....	67,053	53,112	52,398
Mining machinery.....	102,021	176,202	176,318
Other manufactures of iron and steel.....	126,257	108,839	86,204
Bacon and hams.....	64,640	66,063	53,108
Other meat and dairy products.....	40,952	45,188	31,585
Vegetables.....	25,581	29,054	32,866
All other articles.....	222,713	237,081	242,557
Total.....	1,105,971	1,057,004	921,261
TO ASIATIC RUSSIA.			
Iron and steel, manufactures of.....	13,394	21,345	15,455
All other articles.....	38,284	47,859	42,021
Total.....	51,678	69,204	57,476
TO CHINA.			
Fish.....			28,094

The nature of Alaska's products, and the fact that the country is situated quite away from the main routes of transportation, make it little probable that it will ever carry on an important foreign trade directly. Its business is and probably always will be done with or through the markets of the United States.

HAWAII.

CHRONOLOGICAL SUMMARY.—1778, discovered by Capt. Cook; 1898, annexed to the United States; 1900, law passed extending the Constitution to the Hawaiian Islands, including the internal revenue, customs, and maritime laws of the United States, and making the islands a Territory and the people citizens, with a representative, known as a Delegate, in Congress.

GENERAL PHYSICAL CHARACTERISTICS.

The group, formerly known as the Sandwich Islands, consists of a chain of islands in the North Pacific Ocean a little more than 2,000 miles from San Francisco. It includes nine inhabited and a number of uninhabited islands. The latter, however, are mere rocks or reefs. Hawaii, the largest of the islands, forms the southern and eastern end of the chain, which extends for several hundred miles in a generally northwesterly direction. Beyond Hawaii is a group, including Maui, and the smaller islands of Lanai and Kahoolawe. Farther on are Molokai, Oahu, Kauai, and Nihau, in that order, and at last Midway Island, nearly 1,200 miles from Honolulu. The total area of the islands is about 6,450 square miles, or a little more than that of Connecticut and Rhode Island combined. The respective areas are: Hawaii, 4,015 square miles; Maui, 728; Oahu, 598; Kauai, 547; Molokai, 261; Lanai, 139; Nihau, 97; and Kahoolawe, 69. All the islands are of volcanic origin. The surface of Hawaii is described as consisting "mainly of the gentle slopes of five volcanic mountains which have encroached much upon one another by their eruptions." A little south of the middle of the island is Mauna Loa (Great Mountain), the largest volcano in the world. It rises gradually to a height of 13,675 feet above sea level. North of it is Mauna Kea (White Mountain), rising to a height of 13,809 feet. The island as a whole is a mass of hills and mountains. Allowing for differences in altitude, similar conditions exist in the other islands.

CLIMATE.

In the matter of climate, the *Encyclopædia Britannica* states that—

Hawaii is cooler than other regions in the same latitude and is very healthy. The sky is usually cloudless or only partly cloudy. The northeast trades blow with periodic variations from March to December, and the leeward coast, being protected by high mountains, is refreshed by regular land and sea breezes. During January, February, and a part of March the wind blows strongly from the south or southwest, and at this season an unpleasant, hot, damp wind is sometimes felt. More rain falls from January to May than during the other months; very much more falls on the windward side of the principal islands than on the leeward, and the amount increases with the elevation up to about 4,000 feet. The greatest recorded extremes of local rainfall for a year within the larger islands range from 12 to 300 inches. For Honolulu the mean annual rainfall for a term of years was 28.18 inches; the maximum

49.82, and the minimum 13.46. At sea level the daily average temperature for July is 76.4° F., for December 70.7°. The mean annual temperature is about 73°, or 68° during the night and 80° during the day. For each 200 feet of elevation the temperature falls about 1°. Snow lies for the most of the time upon the highest mountains.

SOILS.

In a report submitted several years ago by Mr. Maxwell, the director and chief chemist of the Hawaiian Sugar Planters' Association, the following statement is made regarding the soils of the islands:

The islands are of volcanic origin and, geologically speaking, are of very recent date. The soils are wholly derived from basaltic lavas. In respect of color and geological and chemical composition and nature they fall into the following classes:

(1) *Dark-red soils*.—Soils formed by the simple decomposition of normal lavas under climatic action, and more particularly where great heat and small rainfall have prevailed.

(2) *Yellow and light-red soils*.—Soils which differ not only in color but also in their composition from the dark-red soils, these differences being due to special physical and chemical influences which marked their origin.

(3) *Sedimentary soils*.—Soils derived from the decomposition of lavas at high altitudes, the decomposed matter being removed by rainfalls and deposited over lower lands.

The natural conditions for the production of sugar in the Hawaiian Islands are clearly less favorable than they are in Cuba or in Java, and the planters have sought, quite successfully, to equalize these conditions by the use of extensive and costly irrigation systems and by artificial fertilizing. The islands are now taking from the United States (mainland) fertilizers to a value of about \$1,000,000 yearly. This constitutes a charge of more than 2 per cent on the principal industry of Hawaii. Irrigation is also a heavy charge, for the reason that water is obtained by pumping from artesian wells as well as through canals and channels. This process is not necessary on all of the estates, but by means of it some of the more important plantations have been enabled to extend their operations by the reclamation of land otherwise unproductive.

POPULATION.

The population of the islands shows a total of 191,909 in 1910, as compared with 154,001 in 1900, an increase of 24.6 per cent. The population of the various islands is reported thus: Hawaii, 55,382; Kahoolawe, 2; Kauai, 23,744; Lanai, 131; Maui, 28,623; Oahu, 81,993; Molokai, 1,791; Nihau, 208; Midway, 35.

By reason of the immediate economic situation an abnormal condition exists in the islands. The need of workers on the sugar plantations has brought from Japan and elsewhere a large number of adult males. The result is that while in the United States (mainland) the percentages of sex are nearly normal, the percentages of males in Hawaii is 64.2 and of females 35.8. Even this materially modifies the percentages of 1900, which were 69.1 and 30.9. The same condition accounts for the unusual percentage of persons engaged in gainful occupations. This is a factor of great influence in the purchasing power of the islands.

POPULATION, BY NATIVITY AND SEX.

The point is illustrated by the following table of population, by sex and nativity. Those classed as "native born" were born within the United States or its possessions.

Race.	Total population.	Nativity.		Sex.	
		Native born.	Foreign born.	Males.	Females.
Hawaiian.....	26,041	26,041	.....	13,439	12,602
Caucasian Hawaiian.....	8,772	8,772	.....	4,438	4,334
Asiatic Hawaiian.....	3,734	3,734	.....	1,812	1,922
Portuguese.....	22,303	13,766	8,537	11,573	10,730
Spanish.....	1,990	357	1,633	1,078	912
Porto Rican.....	4,890	4,890	.....	2,878	2,012
Other Caucasian.....	14,867	9,917	4,950	9,255	5,612
Chinese.....	21,674	7,195	14,479	17,148	4,526
Japanese.....	79,674	19,889	59,785	54,783	24,891
Korean.....	4,533	362	4,171	3,931	602
Black.....	158	98	60	120	38
Mulatto.....	537	504	33	295	242
All others.....	2,736	2,632	104	2,349	387
Total.....	191,909	98,157	93,752	123,099	68,810

IMMIGRATION.

The population of the islands is now said to be increasing more through births than through immigration, because immigration is now more largely of families from Europe than of adult males from the Orient, and because the immigration from the Orient is more of females than it was formerly. The influence of this on the nature and quantity of merchandise imported is obvious. Immigration is officially assisted. In Governor Frear's report for 1912 the statement is made that during the last two years the Territory has introduced 4,964 Portuguese, Spanish, and Russians, of whom 3,513 were introduced during the last year, namely, 1,249 men, 785 women, and 1,479 children. The Territory introduces only Caucasians and so far as practicable only agriculturists in families. During the last five and a half years, since the creation of the present board of immigration, the Territory has introduced 5,288 Spanish, 4,962 Portuguese, and 2,056 Russians, a total of 12,306, of whom 4,457 were men, 2,922 women, and 4,927 children, at a cost of \$893,118.82, or an average of \$72.58 per capita, or \$200.39 per man, exclusive of the general expenses of the board. During the last two years the sugar planters have introduced 5,252 Filipinos, of whom 3,043 were introduced during the last year, namely, 2,573 men, 274 women, and 196 children. During the three years that this immigration has been in operation there have been introduced 7,973 Filipinos, namely, 6,930 men, 655 women, and 388 children. The character and condition of the laborers on the sugar plantations have greatly improved, especially during the last few years. The percentage of non-Asiatic laborers has increased from 12.12 per cent in 1899 to 31.28 per cent during the last year. The minimum wages of unskilled labor have increased from \$12.50 a month to \$20 a month plus a bonus depending upon the price of sugar. The increase during the last year was from \$18 to \$20 and the bonus. House, water, fuel, and medical attendance are furnished

free, estimated to equal \$5 additional a month. Most of the laborers, however, receive much more than this. Cottages with modern sanitary arrangements and garden space have been substituted generally for more or less insanitary tenement houses for the laborers.

RESOURCES AND INDUSTRIES.

AGRICULTURE.

The industries and the economic resources of the islands are, practically, exclusively agricultural, and sugar is the one great crop. That industry alone gave employment, in 1911, to about 45,000 people, and its product represents about 95 per cent of the value of total exports.

SUGAR.

The first attempt to cultivate sugar on a commercial scale was made on the island of Kauai, about 1835. Forty years later, in 1875, a little over 25,000,000 pounds were produced. The output since that time shows the following development:

Fiscal years.	Pounds.	Value.	Fiscal years.	Pounds.	Value.
1875.....	25,080,182	\$1,216,389	1906.....	746,602,637	\$24,495,427
1880.....	63,584,871	4,322,711	1907.....	822,014,811	27,692,997
1885.....	171,350,314	8,356,062	1908.....	1,077,570,637	39,816,062
1890.....	259,789,462	12,159,585	1909.....	1,022,863,927	37,632,742
1895.....	294,784,819	7,975,590	1910.....	1,111,594,466	42,625,062
1901.....	690,882,132	27,094,155	1911.....	1,011,215,858	36,704,656
1905.....	832,721,637	35,112,148	1912.....	1,205,165,510	49,961,509

The crop of the various producing islands is reported for the seven crop years ended in 1912 as follows, in tons:

Islands.	1906	1907	1908	1909	1910	1911	1912
Hawaii.....	137,250	143,891	180,159	172,341	159,856	193,456	209,920
Maui.....	102,960	104,772	122,629	134,605	139,454	139,564	148,585
Oahu.....	113,750	119,273	137,013	138,423	128,648	133,133	136,712
Kauai.....	74,753	72,081	81,322	89,787	90,169	100,668	97,041
Total.....	428,713	440,017	521,123	535,156	518,127	566,821	595,258

This is produced by 48 estates that both plant and grind, 3 estates that plant but do not grind, and 2 estates that grind but do not plant. On these various estates more than one-fifth of the entire population of the islands finds employment. The total number so employed and their nationality are thus reported for the year 1910: Americans, 652; Spaniards, 502; Portuguese, 3,577; Russians, 245; other Europeans, 273; Hawaiians, 1,091; Porto Ricans, 1,820; Japanese, 27,258; Chinese, 2,591; Koreans, 1,549; Filipinos, 3,288; all others, 204; total, 42,846.

The reciprocity treaty, effective September 9, 1876, admitted to this country, free of duty, the raw sugar, the molasses, and other principal tropical products of the Hawaiian Islands, in exchange for the free admission into the islands of breadstuffs, provisions, manufactures, and general merchandise from the United States. This

stimulated greatly the sugar industries of Hawaii, and, as shown by the foregoing table of output, rapidly increased the shipments of sugar. The result of the annexation in 1898 was a much greater increase. On a basis of an assured permanent freedom of entrance to the markets of the mainland, planters extended their acreage and expanded their mill facilities. In 1897, the year preceding annexation, the yield was 520,158,232 pounds. It now averages about twice that.

RICE.

The rice industry was formerly of notable importance for both local consumption and for export. The statement is authoritatively made that "the Hawaiian rice industry, which has for so many years played an important part in the prosperity of the Territory, is on the decline." That this is not due to a decline in demand is shown by the statements of imports. The requirement from abroad shows a large increase; in fact, more than 50 per cent within a few years. The consumption of the commodity is evidently increasing and the only inference is that foreign rice is superseding the domestic product. This experience is attributed to the demand of the very large number of Japanese resident in the islands and to their known preference for the rice of their own country. Imports of Japanese rice in 1912 amounted to over \$1,000,000 as compared with \$15,000 from the United States. The remedy for the situation is said to lie in the planting of the Japanese variety in the islands and in better methods of planting and cultivation.

COFFEE AND BANANAS.

Coffee has been produced in the islands for about a hundred years; but the first official record of the crop was made in 1845, when the yield was 248 pounds. The present output is about 3,500,000 pounds, of which about three-fifths is exported and the remainder consumed locally. Nearly all of the present supply comes from the island of Hawaii. The coffee is of the Java type and is classed as a high-grade berry. The plant grows well if planted with proper regard to conditions of soil and moisture and if proper methods of cultivation are followed. There is no doubt that the present crop could be very materially increased. Hawaiian coffee competes with the Central American product on the Pacific coast, and that competition is severe enough to render the Hawaiian industry somewhat precarious without a protective duty.

The banana is successfully grown in the islands and there is a small but increasing export trade. This is another industry that might be appreciably extended if attention was paid to it.

SISAL, TOBACCO, RUBBER, AND COTTON.

The conditions existent in the islands seem highly favorable for the production of henequen, or sisal, and extensive plantations are in operation. An obstacle to its ready and profitable sale in the United States appears in freight charges that are heavy in comparison with the transportation of the product of Yucatan.

A good grade of tobacco is produced on a relatively considerable acreage and there is a tendency toward a material increase in plant-

ings. Some of the crop is manufactured for domestic consumption and some is shipped abroad. Shipments to the United States in the fiscal year 1910 amounted to 187,278 pounds, valued at \$94,978.

Experiments are being made with rubber on a fairly extensive scale and the prospects are regarded as highly promising.

If insect pests can be successfully combated, there seems no reason why the islands should not be a source of supply for cotton of excellent quality. Sea-island cotton is reported as having given most encouraging results in a number of localities, yielding a heavier crop than is obtained in the Charleston (S. C.) district, but the Caravonica variety has thus far proved the most satisfactory of the various kinds that have been tried. From this, yields ranging from 400 to 700 pounds an acre have been obtained. The success of the industry depends upon the discovery of the variety best suited to the local conditions, upon the care taken in cultivation, and upon the eradication of the several insect pests whose activities at present make the industry somewhat precarious. The various experiments now on trial give promise of a successful issue and of the establishment of a reasonably profitable cotton industry.

PINEAPPLES.

In recent years considerable attention has been given to the production of pineapples for canning and preserving. The census taken in 1909 reports 10 canning and preserving establishments giving employment to 816 persons. The Census Bureau states that "canning and preserving, though a comparatively new factory industry, had a value of products in 1909 amounting to \$1,591,073. The first shipment of preserved pineapples from Hawaii was made in 1895, the exports for that year amounting to 468 cases, valued at \$972. By 1899 the value of the exports had increased to \$3,948. Soon after the annexation in 1898 a more rapid development is shown." New companies came into existence, new and larger fields were planted, and new canneries were built. In 1905 shipments were made to a value of \$66,876; in 1907, \$267,629; in 1909, \$1,229,647; in 1911, \$2,020,800; and in 1912, \$2,567,564.

In his report for 1911, Gov. Frear says:

The pineapple industry, which is comparatively new, has grown with such rapidity that it now ranks second to sugar. The pack for 1910 was approximately 610,000 cases. It is estimated that it will approximate 800,000 cases this year (1911). Much additional land is being planted, which will greatly increase the output during the next few years. A new product of this industry, the juice put up in bottles like grape juice, has grown in popularity during the last two years. About 40,000 cases were put up last year (1910) and the output is expected to be doubled this year. Packing houses from the mainland are becoming interested in the industry.

GENERAL FARM DATA.

Farm and plantation conditions in Hawaii contrast sharply with those in Porto Rico. The total farm acreage of the latter (2,085,162 acres) represents 58,371 farms, more than 70 per cent of which are less than 20 acres in extent, while the average for all is 36 acres. Hawaii has 2,590,600 acres of farm land, but only 4,320 farms or plantations, with an average of 599.7 acres in each. Porto Rico is distinctly a land of small farmers, while Hawaii is a land of large plantations and many wage earners. There is a remarkable correspondence in farm values, the value of land and buildings in Porto

Rico being (in 1910) \$82,720,000, and of like property in Hawaii (for the same year), \$82,931,000. The total value of all crops produced in Hawaii in the census year is given as \$28,538,264, with sugar representing \$26,305,747, cereals \$1,121,630, and fruits and nuts \$462,902. The export value of the sugar and pineapples is the result of later processes classed as manufactures.

FOREST RESOURCES.

In an official report to the Department of Agriculture, Mr. William L. Hall makes the statement that there are two thoroughly distinct kinds of forest in the Hawaiian Islands. One kind occurs near sea level, in the drier portions of the islands, and is valuable on account of the timber and other products which it yields. The other kind is found on the mountain slopes, where the rainfall is heavy. It has little commercial but high protective value. In no case do the two forests meet.

Neither of these forest groups can be said to have any important commercial value, that is, they are not the source of any appreciable supply of merchantable lumber. The greatest value of the mountain forests is their service in distributing the rainfall, often torrential, which would otherwise flood and destroy the planted areas on the lower levels. In his report for 1911, Gov. Frear stated that there are now 25 forest reserves, aggregating 631,956 acres, of which 534,657, or 69 per cent, is public land. Most of these reserves have been of protective forests, that is, for the purpose of conserving water sources. He also reports that experiments with coniferous and other trees at high elevations have been continued with the aid of funds from the United States Forest Service. The Census Bureau reports eight concerns engaged in the production of lumber and timber in 1909. They give employment to 299 people, and the output value of the product is given as \$281,325. Most of the wood needed for commercial and construction purposes is imported from the States. The imports of wood in various forms, for the fiscal year 1912, exclusive of furniture, amounted to about \$1,600,000.

ANIMAL INDUSTRIES, MINERALS, AND FISHERIES.

There were in the islands, in the census year, 145,029 cattle of all kinds, 15,856 horses, 7,956 mules, 20,484 swine, 76,710 sheep, and 95,667 poultry of all kinds.

Hawaii has no important mineral resources.

While Hawaiian waters abound with fishes of many kinds, the fishing industry is almost entirely limited to the supply of the local demand. Up-to-date returns are not available, but the value of the catch for local consumption is probably not far from \$1,000,000 yearly, and several thousand people are engaged in the industry. In addition to the local product, the Hawaiian markets bought from other countries, in the fiscal year 1912, not far from \$500,000 worth of fish—dried, smoked, cured, canned, or otherwise prepared or preserved. The supply came largely from the United States.

MANUFACTURES.

The census taken in 1909 gives the following summary of the manufacturing industries of the islands:

	1909	1899	Increase, 1899-1909.
			<i>Per cent.</i>
Number of establishments.....	500	222	125.2
Persons engaged in manufactures.....	7,572	4,418	71.4
Proprietors and firm members.....	¹ 1,074	244	340.2
Salaried employees.....	594	519	14.4
Wage earners (average number).....	5,904	3,655	61.5
Primary horsepower.....	41,930	19,590	114.0
Capital.....	\$23,875,000	\$10,746,000	122.2
Expenses.....	\$31,753,000	\$15,061,000	110.8
Services.....	\$2,795,000	\$2,038,000	37.1
Salaries.....	\$686,000	\$565,000	21.4
Wages.....	\$2,109,000	\$1,473,000	43.2
Materials.....	\$25,629,000	\$12,251,000	109.2
Miscellaneous.....	\$3,329,000	\$772,000	331.2
Value of products.....	\$47,404,000	\$23,354,000	103.0
Value added by manufacture (value of products less cost of materials).....	\$21,775,000	\$11,103,000	96.1

¹ Includes 272 members of cooperative associations not reported in 1899.

This includes the conversion of cane juice into raw sugar, the canning and preserving industry, and the cleaning and polishing of rice, all of which are secondary processes, the preparation of agricultural products for the market.

RELATIVE IMPORTANCE OF INDUSTRIES.

Another table from the same source shows the relative position of the leading industries.

Industry.	Number of establishments.	Wage earners.		Value of products.	
		Average number.	Per cent distribution.	Amount.	Per cent distribution.
Sugar.....	46	2,517	42.6	\$35,950,000	75.8
Rice, cleaning and polishing.....	74	138	2.3	2,239,000	4.7
Canning and preserving, pineapples.....	10	816	20.4	1,591,000	3.4
Slaughtering and meat packing, wholesale.....	10	37	0.6	864,000	1.8
Printing and publishing.....	37	319	5.4	435,000	0.9
Food preparations.....	87	172	2.9	341,000	0.7
Bread and other bakery products.....	46	107	1.8	344,000	0.7
Copper, tin, and sheet-iron products.....	12	80	0.2	304,000	0.6
Coffee, cleaning and polishing.....	5	71	1.2	297,000	0.6
Lumber and timber products.....	8	254	4.3	281,000	0.6
All other industries.....	¹ 165	1,393	18.2	4,758,000	10.1
All industries.....	500	5,904	100.0	47,404,000	100.0

Industry.	Value added by manufacture.		Per cent of increase (1899-1909).	
	Amount.	Per cent distribution.	Value of products.	Value added by manufacture.
Sugar.....	\$17,408,000	79.9	86.7	83.7
Rice, cleaning and polishing.....	638,000	2.9	237.2	250.5
Canning and preserving, pineapples.....	664,000	3.0	(²)	(²)
Slaughtering and meat packing, wholesale.....	122,000	0.6	(²)	(²)
Printing and publishing.....	337,000	1.5	117.5	101.8
Food preparations.....	146,000	0.7	450.0	294.6
Bread and other bakery products.....	124,000	0.6	3,340.0	2,380.0
Copper, tin, and sheet-iron products.....	133,000	0.6	234.1	150.9
Coffee, cleaning and polishing.....	46,000	0.2	212.6	31.4
Lumber and timber products.....	184,000	0.8	208.8	275.5
All other industries.....	1,973,000	9.3	64.9	79.7
All industries.....	21,775,000	100.0	103.0	96.1

¹ Includes two important industries—foundry and machine shops, with 3 establishments, and “fertilizers,” with 2 establishments, for which separate figures can not be given without disclosing individual operations.

² New industry since 1899.

The sugar industry represents, in value of product, about three-quarters of the total, and in the number of employees nearly 43 per cent. The list of employees includes 5,401 males and 503 females, the greater number of the latter being engaged in the canning and preserving establishments. The two leading industries, in point of working force, are what is known as "seasonal." The sugar season covers the first seven months of the year, and the force is then reduced so that in October and November it is less than 30 per cent of its maximum. July, August, and September are the canning months, and the demand for labor in that industry then reaches its maximum. Employment in other lines is fairly steady throughout the year.

Nearly all of the larger establishments are under corporate ownership. Thus, out of the reported 46 sugar mills, 43 were so owned. The canning industry is conducted entirely by corporations, and although only 6 of the 74 rice mills are so owned those 6 produced one-half of the total rice output. Of the 46 sugar mills, there are 11 whose output exceeds \$1,000,000 in value.

MINOR INDUSTRIES.

Most of the manufacturing industries, other than those included in the foregoing tables, are too small for detailed record. Among the more important may be included the following:

Industry.	Estab-lish-ments.	Value of products.	Industry.	Estab-lish-ments.	Value of products.
Boot and shoe shops.....	14	\$126,000	Confectionery.....	6	\$43,000
Carriages, wagons, and mate-rials.....	17	116,000	Furniture.....	6	70,000
Ice.....	5	107,000	Jewelry.....	6	111,000
Mineral and soda waters.....	22	194,000	Millinery and lace goods.....	7	33,000
Saddlery and harness.....	6	49,000	Ship and boat building.....	5	105,000

Among other and smaller industries are such as these: Awnings, tents, and sails; coffins, burial cases, etc.; straw hats, soap, starch, paints, patent medicines, monuments and tombstones, malt and distilled liquors, etc.

For very much the larger part of their requirements the Hawaiian people are dependent upon over-sea markets. For the products of these markets the Hawaiians exchange their sugar, their fruits, and a comparatively small assortment of other articles.

TRANSPORTATION.

Although the term "crossroads of the Pacific" is often applied to the Hawaiian Islands, as a result of the coastwise shipping laws of the United States, the Pacific Mail Steamship Co. is the only through line engaged in the passenger and freight traffic between Hawaii and San Francisco. The American-Hawaiian Steamship Co. handles freight, largely raw sugar, between the islands and Atlantic coast ports by way of the Tehuantepec Railway through Mexico. The Matson Navigation Co. handles the greater part of the traffic between the islands and the Pacific coast. The island people urge very strongly a modification of the laws in a manner that would permit

the call of other trans-Pacific lines. This is desired more particularly for passenger than for freight traffic. It seems probable that a more frequent passenger service would result in benefit both to the people of the islands and the people of the mainland.

The interisland traffic is conducted almost entirely by the Interisland Steam Navigation Co., operating 17 steamers. Last year it carried a total of 71,730 passengers and more than 460,000 tons of freight.

In his report for 1912 Gov. Frear states that "the Territory is isolated in the mid-Pacific; it is subdivided into a number of islands; each island is mountainous; good natural harbors are scarce. Consequently there are few problems upon the solution of which the development of the Territory is more dependent than upon that of adequate transportation facilities. Hitherto Hawaii has been dependent mainly upon its own demand for shipping facilities, and indeed has long been an important factor in the maintenance of the American merchant marine upon the high seas. But, with the development of trans-Pacific commerce, the Territory is constantly reaping in larger measure the benefits of the steamers between other countries, and the prospective opening of the Panama Canal has already resulted in orders for additional steamers, both American and foreign, in the advantages of which Hawaii will have a share. Among the companies now operating to or through Hawaii one American company already has under construction eight new steamers and another American and one foreign company have one new steamer each under construction. During the last year an American company resumed its run between San Francisco and Australia with two steamers, and one foreign company replaced one of its smaller steamers with a much larger one. Dredging and breakwater work has progressed at the principal harbors on the three largest islands, and a plan has been recommended for the development of the principal harbor on the fourth island in size. The Territory has let contracts for a number of important wharves, to cost several hundred thousand dollars."

STEAM AND OTHER RAILROADS.

A steam railway is in operation on the island of Oahu, running from Honolulu to the extreme northern point. It has about 110 miles of track, including the main line and several branches. It has extensive wharves and storehouses equipped with apparatus for rapid handling of freight. Its equipment includes 18 locomotives, 38 passenger cars, and 390 freight cars (report of 1911). On the same island another company operates a line of 11 miles. There are some 80 or 90 miles of line running to interior stations in Hawaii (the island). Maui has about 16 miles of line and Kauai about 11 miles. These various systems connect with the private lines of the sugar plantations, whose total trackage is about the same as that of the public companies. Honolulu has the only street railway in the Territory. This is an electric line with about 25 miles of track. In 1911 it carried about 9,000,000 passengers. A highway system has been devised for the various islands and is in process of construction, the work being carried on as rapidly as finances will permit. There is telegraph connection between all important points, and the telephone system is being extended as fast and as far as possible.

BANKS, INSURANCE, AND FINANCES.

The bank statement shows 17 banks in operation on December 31, 1911, with commercial deposits amounting to \$12,667,162, and savings deposits amounting to \$5,521,973, a total of \$18,189,135. This is an increase from 8 banks, on December 31, 1901, with total deposits of \$4,662,131. The report for 1911 shows 86 insurance companies doing business in the Territory. They cover the usual range of life, fire, marine, accident, fidelity, plate glass, automobile, etc. All except one are classed as foreign companies, that is, organized outside the Territory.

At the close of the fiscal year 1912, the Territorial bonded indebtedness was \$5,454,000, a little later increased to \$6,954,000, or 3.93 per cent of the assessed value of property. The assessed value in the last fiscal year was \$176,834,801, real property representing \$90,889,057 and personal property \$85,945,744. Half of the personal property and nearly half of the real is located in the city and county of Honolulu. The Territorial revenues for the fiscal year 1912 amounted to a total of \$4,315,972.76.

COMMERCE.

HAWAII AS A BUYER.

The commerce of Hawaii is much like that of Alaska in the fact that most of the business of the islands, both purchase and sale, is done with the United States. Another likeness is in the fact that the Hawaiian market is not responsive to selling pressure, that is, there is a fairly fixed limit to its purchasing power. Its needs are determined by conditions that are relatively restricted by climatic and by social conditions. As the resources of Alaska are predominantly its mines and its fisheries, the resources of Hawaii are almost exclusively agricultural and the range in that industry is at present limited, in the matter of surplus for export, very largely to sugar and pineapples. Even more than does Cuba, Hawaii lives on its sugar crop. If the crop is large and prices high, the islands flourish and the people have money to spend.

The import trade movement in recent years has been as follows:

Years. ¹	From United States.	From other countries.	Total.	Years. ¹	From United States.	From other countries.	Total.
1890.....	\$5,259,154	\$1,703,047	\$6,962,201	1904.....	\$11,683,393	\$3,797,641	\$15,481,034
1895.....	4,516,319	823,466	5,339,785	1905.....	11,753,180	3,014,964	14,768,144
1896.....	5,464,208	599,444	6,033,652	1906.....	12,036,675	3,275,242	15,311,917
1897.....	6,800,028	882,000	7,682,628	1907.....	14,435,725	4,151,709	18,587,434
1898.....	8,695,592	1,673,223	10,368,815	1908.....	15,038,155	4,682,399	19,720,554
1899.....	15,020,830	1,048,747	16,069,577	1909.....	17,780,778	4,033,574	21,814,352
1900.....	8,709,822	1,521,376	10,231,198	1910.....	20,500,101	4,006,334	25,166,435
1901.....	(²)	2,835,278	(²)	1911.....	21,925,177	5,190,449	27,115,626
1902.....	(²)	3,036,583	(²)	1912.....	24,648,915	5,598,444	30,247,359
1903.....	10,943,063	3,142,013	14,085,076				

¹ 1890 to 1899, calendar years; 1900, from Jan. 1 to June 14; 1901 to 1912, fiscal years.

² No data.

Two influences affect appreciably the purchases of Hawaii from countries other than the United States. One is the presence of a large number of Japanese laborers who prefer the rice of their own

country to the local product. The other is that Hawaii being a port of call for trans-Pacific steamers of various countries has developed a trade of more or less importance with the countries from which the vessels come.

SHIPMENTS FROM THE UNITED STATES TO HAWAII.

A classified summary of the shipments of merchandise of domestic production from the United States to Hawaii shows the following for the fiscal years stated:

Groups.	1908	1909	1910	1911	1912
Foodstuffs in crude condition, and food animals.....	\$1,046,043	\$1,251,048	\$1,385,675	\$1,604,483	\$1,892,663
Foodstuffs partly or wholly manufactured..	2,931,358	3,270,967	3,200,653	3,353,751	3,885,009
Crude materials for use in manufacturing...	944,859	858,139	1,245,810	1,168,550	1,026,992
Manufactures for further use in manufacturing.....	1,418,137	1,627,304	2,185,966	2,319,880	2,688,924
Manufactures ready for consumption.....	8,145,647	9,893,471	12,096,184	13,019,830	14,627,379
Miscellaneous.....	152,673	292,290	174,729	210,719	297,704
Total.....	14,638,717	17,193,219	20,289,017	21,677,213	24,418,671

The figures of imports of foodstuffs are open to the explanation that they include such commodities as hay, oats, barley, bran, mill feed, etc., as well as food for table use.

PURCHASES FROM THE UNITED STATES.

The imports from the United States are given in detail on pages following. In many lines, probably in most, there has been fluctuation rather than an appreciable gain in the last five years. A few lines show decline. Among the items showing more or less important gains are barley, oats, automobiles and tires, cement, cotton clothing and wearing apparel, earthen and stone ware, fish, glass and glassware, hay, telegraph and telephone apparatus, steel rails, iron and other sheets and plates, pipes and fittings, miscellaneous manufactures of iron and steel, manufactures of lead, boots and shoes, bacon and hams, dairy products, mineral and vegetable oils, paper, wines, refined sugar, cigarettes and smoking tobacco, vegetables, and lumber.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Agricultural implements, and parts of.										
Animals:										
Cattle.....number..	221	119	152	145	164	\$31,286	\$35,106	\$30,816	\$32,010	\$53,634
Hogs.....do.....	502	1,660	411	5	36	25,800	8,550	16,980	15,838	24,060
Horses.....do.....	176	718	136	430	787	5,463	17,887	4,637	15,145	1,015
Mules.....do.....	540	797	608	555	738	38,212	124,891	28,760	72,881	127,504
Sheep.....do.....	45	39	100	189		108,147	156,710	133,995	125,171	157,425
All other (including fowls).....						410	424	510	2,793	.....
Art works: Paintings and statuary.....						10,289	6,096	5,620	8,941	18,225
Blacking.....						4,405	1,870	15,534	13,421	10,352
Brass, and manufactures of.....						10,094	10,569	10,589	10,583	7,713
Breadstuffs:						32,721	44,105	68,125	72,257	73,020
Barley.....bushels..	505,551	575,819	781,814	1,201,694	839,837	338,545	410,637	514,573	678,368	682,259
Bran, middlings, and mill feed.....tons..	22,234	22,942	16,877	13,494	20,361	549,226	604,480	452,349	348,687	553,522
Bread and biscuits.....pounds..	635,017	460,877	326,982	219,379	862,167	43,770	37,036	25,693	18,347	78,395
Corn.....bushels..	49,340	58,937	40,967	61,079	58,960	42,494	55,595	38,218	52,564	59,790
Cornmeal.....barrels..	74	99	138	231	41	284	468	678	1,094	188
Oats.....bushels..	104,850	152,695	150,926	97,379	332,882	52,052	81,101	77,245	50,733	193,116
Oatmeal and rolled oats.....pounds..	40,310	39,532	37,900	38,310	488,845	1,691	1,731	1,885	1,795	3,601
Rice.....do.....	95,524	109,300	70,000	144,500	348,450	4,821	4,358	2,600	6,581	15,229
Wheat.....bushels..	60,345	69,692	68,053	74,863	104,742	58,167	73,133	71,891	68,388	97,054
Wheat flour.....barrels..	113,185	121,838	103,548	118,377	128,166	502,488	567,603	535,732	534,399	572,634
Preparations of, for table food.....						73,610	100,942	161,957	164,890	143,492
All other.....						12,860	28,711	24,572	25,452	39,350
Brooms and brushes.....						21,746	27,296	29,185	42,444	34,403
Buttons, and parts of.....						.....	.....	3,998	4,082	5,191
Candles.....pounds..	62,523	140,650	106,593	189,711	130,571	6,181	11,697	9,919	16,016	10,243
Cars, carriages, other vehicles, and parts of:										
Automobiles.....number..	131	205	341	370	498	260,939	444,790	682,886	723,056	862,101
Parts of automobiles (except tires).....						15,761	57,633	62,612	68,028	68,518
Steam railway cars.....						49,106	9,078	44,510	20,006	.....
Other railway cars.....						12,222	85,640	27,033	49,246	52,085
Cycles and motor cycles and parts of (except tires).....						20,866	34,138	43,044	49,580	59,447
Wheelbarrows, pushcarts, and hand trucks.....						6,549	5,204	5,228	8,002	12,135
All other.....						86,603	71,057	73,260	70,479	75,751
Celluloid, and manufactures of.....barrels..						3,456	466	2,254	1,528	.....
Cement.....	32,132	36,851	94,661	105,314	89,892	73,466	76,314	200,337	222,736	190,350
Chemicals, drugs, dyes, and medicines:										
Acids.....						15,822	14,995	13,561	11,526	9,579
Baking powder.....pounds..	46,590	135,667	114,341	76,505	54,214	14,511	39,438	32,165	24,873	15,021
Calcium carbide.....do.....			138,392	323,840	199,018	.....	.....	5,666	12,543	9,461
Medicines, patent or proprietary.....						69,878	35,089	33,114	54,418	41,478
All other.....						209,553	235,766	247,692	314,047	304,085
Clocks and watches:										
Clocks and parts of.....						16,801	14,606	16,399	17,079	18,731
Watches and parts of.....						740	5,426	5,418	6,792	9,253

Coal and coke:	Anthracite.....	tons.....	103	403	286	235	.....	1,236	5,677	3,323	1,520
	Bituminous.....	do.....	18,820	58,885	41,716	1,308	181,090	61,875	158,375	127,416	12,105
	Coke.....	do.....	360	331	53	.....	4,515	3,859	4,517	925	.....
	Cocoa and chocolate (except confectionery).....	do.....	.....	.....	.....	.....	14,715	16,874	19,271	21,981	30,108
Coffee, roasted or prepared.....	.....	pounds.....	101,742	121,133	91,490	90,660	8,959	14,980	18,553	15,295	16,536
	Copper, and manufactures of.....	.....	.....	.....	.....	.....	39,930	28,661	89,973	60,734	48,715
	Cork, manufactures of.....	.....	.....	.....	.....	.....	8,181	4,075	3,274	.....	8,377
	Cotton, manufactures of:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unbleached cloth.....	.....	yards.....	372,430	689,294	599,847	455,426	40,278	25,044	49,947	54,232	43,762
	Bleached cloth.....	do.....	928,590	676,553	819,623	1,570,748	145,481	78,902	71,852	80,550	114,993
	Dyed, colored, stained, painted, or printed.....	do.....	13,047,014	8,288,439	10,550,811	7,936,229	381,926	711,893	555,542	627,331	495,474
	Clothing and other wearing apparel—	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Knit goods.....	.....	.....	.....	.....	.....	.....	157,895	175,264	136,763	173,060	155,067
	All other.....	.....	.....	.....	.....	.....	276,587	360,676	482,822	667,420	577,025
	All other manufactures.....	.....	.....	.....	.....	.....	243,418	343,035	469,437	625,016	981,372
	Dental goods ³.....	.....	.....	.....	.....	.....	.....	1,520	1,927	2,520	.....
Earthen, stone, and china ware:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Bricks and tiles.....	.....	.....	.....	.....	.....	17,707	11,290	15,850	15,220	16,301
	Earthen and stone ware.....	.....	.....	.....	.....	.....	19,935	28,400	29,739	33,718	48,843
	China ware.....	.....	.....	.....	.....	.....	25,244	24,883	20,258	32,973	14,913
Eggs.....	.....	dozen.....	81,874	86,670	106,440	154,914	16,511	21,790	25,170	28,040	37,282
	Explosives:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Cartridges.....	.....	.....	.....	.....	.....	13,008	30,430	76,655	21,519	9,346
	Dynamite.....	pounds.....	357,750	686,075	931,734	342,500	35,633	39,573	66,726	101,818	41,013
Gunpowder.....	.....	do.....	2,898	127,565	26,050	41,644	6,800	752	47,554	3,559	3,842
	All other.....	.....	.....	.....	.....	.....	24,007	26,903	68,294	72,826	181,752
	Felt and similar material for roofing.....	.....	.....	.....	.....	.....	3,901	10,459	9,315	9,801	19,966
	Fertilizers.....	tons.....	20,727	23,063	24,455	20,756	912,979	798,209	958,930	1,022,789	941,329
Fibers, vegetable, and textile grasses, manufactures of:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Bags.....	.....	.....	.....	.....	.....	19,488	15,741	6,146	113	19,754
	Cordage.....	pounds.....	1,014,714	675,181	906,475	821,023	73,698	99,029	58,941	74,659	64,178
	Twine.....	.....	.....	.....	.....	.....	22,132	21,464	16,287	13,976	19,648
All other.....	.....	.....	.....	.....	.....	.....	12,354	10,878	14,492	13,165	15,790
	Fish:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Dried, smoked, or cured.....	pounds.....	741,275	655,105	735,000	1,242,460	32,080	36,316	24,826	36,581	71,137
	Pickled.....	barrels.....	166	58	88	.....	1,678	755	571	1,181	.....
Canned salmon.....	.....	pounds.....	1,440,410	1,381,398	1,231,264	1,850,567	89,025	121,716	113,526	119,872	194,385
	All other salmon.....	.....	.....	.....	.....	.....	67,143	73,848	72,194	76,572	68,641
	Canned fish (except salmon and shellfish).....	.....	.....	.....	.....	.....	41,690	21,427	68,978	92,362	57,495
	Oysters.....	.....	.....	.....	.....	.....	16,642	14,386	14,203	11,332	15,859
All other shellfish.....	.....	.....	.....	.....	.....	.....	16,365	16,577	25,080	33,186	23,398
	All other fish and fish products.....	.....	.....	.....	.....	.....	26,072	36,208	30,523	18,477	16,948
	Fruits and nuts:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Apples, green or ripe.....	barrels.....	14,112	23,487	21,819	14,991	35,731	41,243	50,459	54,123	56,787
Oranges.....	.....	boxes.....	23,475	32,363	35,584	34,881	54,080	57,353	70,286	80,952	90,363
	Prunes.....	pounds.....	37,323	62,705	63,799	68,724	2,507	2,647	3,381	5,635	6,246
	Raisins and other dried grapes.....	do.....	63,895	85,745	89,453	107,873	6,119	4,759	5,449	6,392	9,254
	All other fruit, green, ripe, or dried.....	.....	68,972	85,745	89,453	107,873	33,325	43,060	48,730	54,206	72,732
Prepared or preserved fruit.....	.....	.....	.....	.....	.....	.....	39,275	30,307	50,497	52,670	54,208
	Nuts.....	.....	.....	.....	.....	.....	11,321	11,918	12,059	15,364	18,277

¹ Included in "All other articles" prior to July 1, 1909. ² Included in "All other chemicals, drugs, and dyes" prior to July 1, 1909. ³ Included in "All other articles" prior to July 1, 1908.

Articles.	Quantity..					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Furniture of metal.....						\$16,942	\$13,338	\$28,575	\$19,615	\$34,312
Furs and fur skins.....						1,556	3,222	6,942	5,584	11,852
Glass and glassware.....						95,935	113,209	175,430	225,350	196,307
Gold and silver, manufactures of.....						9,620	2,227	12,182	9,722	5,158
Grease, lubricating and other.....						6,533	13,118	11,743	17,608	14,687
Hair, and manufactures of.....						3,112	2,560	5,821	4,270	1,636
Hay.....	9,588	11,449	9,026	13,894	13,356	182,636	234,110	191,118	250,745	247,544
Household and personal effects ¹									118,131	131,328
India rubber, and manufactures of:										
Belting, hose, and packing.....						45,327	45,031	53,419	60,152	67,550
Boots and shoes.....	13,612	13,540	12,329	19,353	10,871	12,426	11,332	11,161	17,249	9,699
Automobile tires ²									188,068	246,607
All other tires ²									2,011	8,418
All other.....						68,248	101,092	163,215	70,493	67,278
Ink.....						6,696	7,617	6,213	6,038	7,822
Instruments and apparatus, electrical and for scientific purposes:										
Electrical appliances, including telephone and telegraph instruments.....						42,973	76,678	269,342	163,828	211,037
All other ³						29,194	32,657	25,106	19,548	14,349
Iron and steel, and manufactures of:										
Pig iron.....	88	520	917	70	41	2,497	13,152	19,034	1,458	1,012
Bar iron.....	989,961	2,830,737	2,382,676	919,264	1,016,347	31,972	60,900	56,270	21,211	19,302
Bars or rods of steel.....	1,158,022	1,571,011	2,355,469	2,535,736	3,603,218	33,523	36,191	57,755	51,024	61,762
Steel rails.....	1,508	2,653	5,677	1,815	3,188	46,193	84,813	185,583	61,381	101,684
Sheets and plates—										
Iron.....	3,373,477	4,821,019	3,289,318	6,416,507	7,632,530	100,201	143,162	96,030	184,641	191,593
Steel.....	1,410,029	1,261,640	2,036,341	1,355,915	2,418,072	45,835	29,653	53,533	32,420	56,175
Tinplates, terneplates, and taggers tin....do.....	2,684,989	4,162,264	4,773,584	6,671,827	9,404,511	121,835	172,739	200,840	272,605	381,345
Structural iron and steel.....	478	361	1,295	3,666	2,944	42,428	19,481	78,610	157,396	169,606
Wire.....	836,748	996,589	499,166	1,198,557	684,721	23,658	25,804	12,757	32,919	17,790
Builders' hardware and tools—										
Locks, hinges, etc.....						44,115	45,278	46,442	90,757	63,333
Saws.....						9,032	8,521	8,656	11,402	13,019
Tools, n. e. s.....						99,192	94,859	62,475	82,286	78,086
Car wheels.....		2,229	978	810	690	7,183	17,825	15,708	8,542	7,038
Castings, n. e. s.....	1,054					72,285	32,683	38,833	71,985	75,596
Cutlery.....						7,985	11,486	12,483	16,654	16,322
Firearms.....						166,084	356,569	20,799	35,313	202,036
Machinery, machines, and parts of—										
Adding machines ⁴									5,206	6,086
Cash registers.....	71	61	91	184	153	8,219	7,489	9,390	22,021	12,720
Electrical machinery.....						78,781	33,780	137,822	91,990	32,683
Metal-working machinery.....							550	2,188	58	
Mining machinery.....									2,320	
Printing presses.....									3,735	5,649
Pumps and pumping machinery.....						4,813	841	12,367	49,878	27,675
						24,028	20,766	43,228		

[illegible]

Included in "All other articles" prior to July 1, 1910.

² Included in "All other manufactures of india rubber" prior to July 1, 1910.

³ Includes "Phonographs, graphophones, etc.," prior to July 1, 1909.

⁴ Included in "All other machinery" prior to July 1, 1910.

Quantity not stated prior to July 1, 1909.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Motor boats.....number.....					4			\$8,250	\$12,458	\$5,246
Musical instruments, and parts of:										
Pianos.....do.....	67		158	141	214	\$22,014	31,755	46,162	42,579	53,825
All other.....do.....		103				10,904	10,945	9,858	17,072	11,637
Naval stores:										
Rosin, tar, turpentine, and pitch.....barrels.....	1,502	1,465	1,626	1,089	1,139	6,865	6,486	8,019	5,683	6,682
Turpentine, spirits of.....gallons.....	17,833	11,940	13,264	15,833	26,657	11,520	7,241	8,804	12,895	16,031
Oil cake and oil-cake meal.....pounds.....		29,243	23,890	154,088			510	394	2,211	
Oilcloth.....do.....						8,153	10,781	17,335	13,756	16,254
Oils:										
Animal.....gallons.....	1,602	4,322	2,319	1,858	878	1,247	3,200	1,945	1,345	599
Mineral—										
Crude.....do.....	46,873,900	43,111,700	51,716,793	48,867,100	48,356,550	740,580	754,260	1,022,945	982,510	956,093
Naphthas.....do.....	600,813	669,969	961,228	1,082,759	1,516,669	91,973	98,023	150,657	179,342	237,700
Illuminating oil.....do.....	1,239,073	1,425,472	1,222,141	1,581,294	1,956,117	194,566	227,729	210,962	226,146	237,697
Lubricating oil and heavy paraffin oil.....do.....	259,703	418,124	376,507	409,334	530,607	86,526	155,602	135,447	133,488	166,690
Residuum.....do.....		155,975	323,315	422,185	5,380,063		13,408	27,168	30,785	107,323
Vegetable—										
Cottonseed.....pounds.....		7,043	9,590	11,782			602	906	1,335	
Linseed.....gallons.....	39,029	49,046	42,059	45,942	58,667	22,349	29,749	32,773	49,127	49,163
All other.....do.....						14,584	16,579	15,248	20,176	28,037
Paints, pigments, and varnishes:										
Varnish.....gallons.....	4,725	4,692	7,467	7,595	13,662	5,221	6,668	10,396	12,241	20,296
All other.....do.....						122,119	158,867	187,990	228,940	241,429
Paper, and manufactures of:										
Books, music, maps, engravings, etchings, photographs, etc.....						110,532	113,232	251,856	136,977	163,564
Paper hangings.....do.....						7,932	4,683	7,067	8,845	7,206
Playing cards.....do.....						5,202	5,644	5,156	1,791	1,585
News print paper ¹.....pounds.....				{ 555,862	405,058		48,085	43,213	19,071	15,851
All other printing paper.....do.....	912,115	960,113	855,583	663,237	851,790			64,461	41,450	56,117
Writing paper and envelopes.....do.....						68,748	80,556	140,076	74,242	79,745
All other paper.....do.....						114,818	139,869	140,076	167,676	231,696
Pencils.....do.....						4,427	3,542	4,340		6,167
Perfumeries, cosmetics, and other toilet preparations.....						8,936	10,307	19,597	22,137	28,270
Phonographs, graphophones, etc. ².....do.....								20,677	44,172	34,428
Photographic goods ³.....do.....								190,823	104,914	92,372
Plated ware.....do.....								39,499	17,731	25,652
Salt ⁴.....pounds.....	1,004,887	899,610	1,058,945		3,285,490	12,741	9,711	7,873		13,408
Seed.....do.....						9,812	6,160	9,784	9,078	9,295
Silk, manufactures of.....do.....						6,118	8,117	78,023	76,445	62,418
Soap:						65,315	61,357			
Toilet or fancy.....pounds.....						12,240	19,690	19,745	31,213	32,027
All other.....do.....	3,029,144	2,616,969	2,521,890	2,723,970	3,435,451	124,273	96,514	117,950	127,235	161,490
Spirits, wines, and malt liquors:										
Malt liquors.....gallons.....	214,221	182,532	209,927	230,494	436,908	103,508	91,823	110,667	121,905	206,128
Bourbon whisky.....proof gallons.....	18,864	24,581	22,642	35,248	38,097	46,166	56,425	52,986	79,026	82,975

Rye whisky.....do.....	9, 063	8, 494	7, 660	6, 286	4, 169	18, 870	28, 956	13, 318	16, 612	11, 835
All other distilled spirits.....do.....	16, 294	25, 616	24, 365	24, 268	32, 083	37, 577	56, 788	56, 180	49, 802	59, 189
Wines.....do.....	653, 087	726, 513	833, 030	868, 835	868, 477	290, 375	324, 623	331, 887	371, 596	364, 706
Starch.....gallons.....	310, 795	311, 029	313, 222	226, 713	447, 214	11, 094	12, 737	15, 712	12, 345	17, 306
Stone, and manufactures of (including marble).....pounds.....	.....	.....	.....	.....	.....	8, 045	7, 929	9, 503	17, 859	56, 185
Straw and palm leaf, manufactures of.....do.....	.....	.....	.....	.....	.....	23, 400	22, 770	30, 994	45, 856	66, 194
Sugar, molasses, and confectionery:.....galls.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Molasses and sirup.....pounds.....	4, 920	7, 388	8, 366	8, 165	17, 913	4, 775	4, 217	5, 693	4, 857	9, 858
Sugar, refined.....pounds.....	1, 946, 598	926, 616	622, 242	1, 290, 489	728, 467	98, 483	52, 023	34, 965	71, 023	43, 161
Confectionery.....pounds.....	.....	.....	.....	.....	.....	37, 533	41, 945	55, 514	68, 361	83, 669
Tin, manufactures of.....do.....	.....	.....	.....	.....	.....	49, 473	54, 963	24, 342	62, 155	69, 017
Tobacco, and manufactures of:.....do.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cigars and cheroots.....M.....	3, 124	4, 676	2, 786	2, 443	4, 138	93, 004	144, 329	85, 145	71, 813	118, 667
Cigarettes.....M.....	17, 316	38, 839	60, 998	30, 454	39, 185	58, 976	105, 375	154, 498	131, 029	171, 642
Plug.....pounds.....	248, 183	99, 653	123, 473	92, 466	71, 732	83, 836	36, 193	48, 172	38, 104	37, 472
Smoking ⁶.....do.....	.....	.....	814, 304	675, 474	893, 865	222, 309	320, 933	351, 928	309, 087	431, 396
All other.....do.....	.....	.....	.....	.....	.....	34, 212	22, 319	19, 918	12, 011	3, 289
Toys.....do.....	.....	.....	.....	.....	.....	26, 261	25, 639	36, 789	24, 111	40, 508
Trunks, valises, and traveling bags.....do.....	.....	.....	.....	.....	.....	.....	.....	46, 142	.....	56, 071
Vegetables:.....bushels.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beans and dried peas.....do.....	18, 851	18, 592	17, 463	15, 654	19, 281	38, 010	39, 196	42, 769	42, 522	48, 576
Onions.....do.....	16, 247	18, 637	24, 396	25, 067	33, 754	23, 791	13, 697	18, 731	26, 279	28, 246
Potatoes.....do.....	99, 158	114, 639	127, 895	111, 921	158, 872	79, 232	99, 550	80, 606	118, 758	158, 109
Canned vegetables.....do.....	.....	.....	.....	.....	.....	42, 363	34, 851	50, 389	68, 327	78, 474
All other (including pickles and sauces).....do.....	.....	.....	.....	.....	.....	38, 616	45, 308	41, 011	45, 501	51, 171
Wood, and manufactures of:.....M feet.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Logs and other round timber ⁶.....do.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boards, planks, deals, joists, etc.....do.....	27, 912	41, 528	61, 079	61, 089	70, 459	446, 958	647, 791	947, 814	927, 788	1, 019, 126
Shingles.....M.....	11, 732	16, 885	18, 486	24, 031	24, 034	27, 965	34, 536	39, 918	48, 938	45, 872
Box shooks ⁶.....number.....	.....	.....	.....	.....	1, 639, 514	55, 147	71, 334	59, 181	105, 218	145, 185
All other lumber.....do.....	.....	.....	.....	.....	.....	39, 327	32, 681	36, 241	21, 944	.....
Doors, sash, and blinds.....do.....	.....	.....	.....	.....	.....	26, 859	28, 257	58, 767	61, 234	98, 056
Furniture.....do.....	.....	.....	.....	.....	.....	131, 300	185, 435	174, 900	212, 216	245, 401
Hogsheads and barrels, empty.....do.....	.....	.....	.....	.....	.....	474	383	285	.....	.....
Trimmings, molding, and other house finishings.....do.....	.....	.....	.....	.....	.....	16, 428	15, 910	10, 140	7, 449	18, 480
All other manufactures of wood.....do.....	.....	.....	.....	.....	.....	107, 079	71, 315	75, 694	108, 546	199, 085
Wool, manufactures of:.....do.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wearing apparel.....do.....	.....	.....	.....	.....	.....	169, 056	129, 975	97, 087	84, 877	45, 095
All other.....do.....	.....	.....	.....	.....	.....	133, 842	156, 521	168, 192	152, 087	157, 577
Zinc, and manufactures of.....do.....	.....	.....	.....	.....	.....	6, 155	6, 161	4, 230	6, 902	5, 370
All other articles.....do.....	.....	.....	.....	.....	.....	262, 546	270, 609	512, 097	361, 408	318, 262
Total.....do.....	.....	.....	.....	.....	.....	14, 638, 717	17, 193, 219	20, 289, 017	21, 677, 213	24, 418, 671
Shipments of foreign merchandise from United States to Hawaii.....do.....	.....	.....	.....	.....	.....	399, 438	587, 559	271, 084	247, 964	229, 234
Grand total.....do.....	.....	.....	.....	.....	.....	15, 038, 155	17, 780, 778	20, 560, 101	21, 925, 177	24, 648, 915

¹ Not separately stated prior to July 1, 1910.
² Included in "All other instruments and apparatus" prior to July 1, 1909.
³ Included in "All other articles" prior to July 1, 1908.
⁴ Included in "All other articles" from July 1, 1910, to June 30, 1911.
⁵ Included in "All other manufactures of tobacco" prior to July 1, 1909.
⁶ Quantity not stated prior to July 1, 1911.

IMPORTS FROM FOREIGN COUNTRIES.

Hawaii's direct imports from countries other than the United States have been, for the fiscal years indicated, as follows:

Years.	Value.	Years.	Value.
1900 ¹	\$1,521,376	1908.....	\$4,682,399
1902.....	3,036,583	1909.....	4,033,574
1904.....	3,797,641	1910.....	4,606,334
1906.....	3,275,242	1911.....	5,190,449
1907.....	4,151,709	1912.....	5,598,444

¹From Jan. 1 to June 14.

The leading articles of importation and their origin appear in the following table:

Articles and countries.	1910	1911	1912
FROM GERMANY.			
Ammonia, sulphate of.....	\$84,965	\$105,042	\$65,494
Potash, sulphate of.....	103,717	276,078	54,160
Fertilizers.....	25,134	67,353	176,134
All other articles.....	98,924	142,876	74,328
Total.....	312,740	591,349	370,116
FROM UNITED KINGDOM.			
Ammonia, sulphate of.....	245,885	333,850	465,452
All other articles.....	209,845	232,348	246,150
Total.....	455,730	566,198	711,602
FROM CHILE.			
Nitrate of soda.....	568,986	532,376	590,589
All other articles.....	153		
Total.....	569,139	532,376	590,589
FROM BRITISH INDIA.			
Jute bags.....	511,374	520,815	590,936
All other articles.....	8,055	31,781	32,456
Total.....	519,429	552,596	623,392
FROM PHILIPPINE ISLANDS.			
Cigars, cigarettes, etc.....	88,454	97,976	81,015
All other articles.....	784	5,001	2,980
Total.....	89,238	102,977	83,995
FROM HONGKONG.			
Fish, shrimps, etc.....	18,145	18,555	21,020
All other fish.....	22,561	21,306	25,769
Spirits, distilled.....	29,774	42,565	43,407
All other articles.....	210,751	222,750	239,618
Total.....	281,231	305,176	329,814
FROM JAPAN.			
Fish, shrimps, etc.....	68,293	79,867	97,402
All other fish.....	76,753	88,600	106,238
Cotton cloths.....	78,500	93,921	108,627
Rice and rice flour.....	709,673	815,972	1,001,471
Silk, and manufactures of.....	72,463	90,376	103,824
Vegetables.....	200,112	268,705	296,173
Wines.....	137,677	133,515	160,351
All other articles.....	512,905	451,742	540,251
Total.....	1,856,376	2,022,698	2,414,346
FROM AUSTRALIA.			
Ammonia, sulphate of.....	61,492	70,563	38,843
Coal, bituminous.....	159,317	150,180	148,522
Butter.....	6,782	7,347	18,131
All other articles.....	49,814	66,234	124,753
Total.....	277,405	294,324	330,263
From all other countries.....	245,046	222,755	144,327

Nearly one-half of the foreign imports of 1912 came from Japan. Their purchase is due, in large part, to the presence of about 80,000 Japanese (out of a total population of 191,909) with their preference for some of the products of their own country. The increase in this demand has been notable. The total imports from Japan in 1912 were \$2,414,346, an increase from \$962,651 in 1905. Of the imports from other countries, a large part, about \$1,400,000, was represented by fertilizers and fertilizer materials.

HAWAII AS A SELLER.

The item of sugar represents 90 per cent of the exports of the island and pineapples represent about 5 per cent. The remainder consists largely of subtropical products shipped in small quantities. The industries of the island are thus highly specialized. Any serious disaster to the sugar industry would, for a time, result in widespread misery. The export trade movement has been as follows:

Years. ¹	To United States.	To other countries.	Total.	Years. ¹	To United States.	To other countries.	Total.
1890.....	\$13,073,477	\$69,352	\$13,142,829	1906.....	\$26,882,199	\$56,313	\$26,938,512
1895.....	8,392,190	81,948	8,474,138	1907.....	29,071,813	229,914	29,301,727
1900.....	14,362,899	41,597	14,404,496	1908.....	41,640,505	597,640	42,238,145
1901.....	27,903,058	120,211	28,023,269	1909.....	40,432,945	84,152	40,517,097
1902.....	24,730,060	63,547	24,793,607	1910.....	46,183,265	306,763	46,490,028
1903.....	26,242,869	32,569	26,275,438	1911.....	41,207,651	730,642	41,938,293
1904.....	25,157,255	47,620	25,204,875	1912.....	55,076,070	373,273	55,449,343
1905.....	36,112,055	59,541	36,171,596				

¹ 1890 to 1899, calendar years; 1900, from Jan. 1 to June 14; 1901 to 1912, fiscal years.

The export trade of Hawaii offers little opportunity for comment. All except a small part of the yearly shipments comes to this country and most of the merchandise is raw sugar.

The sales to other countries for the period 1909-1912, inclusive, have been, respectively, \$79,030, \$300,032, \$725,624, and \$358,669. The greater part of this consisted of articles not originating in the islands. Canned fruits and coffee constituted much the greater part of the exports of native products.

SHIPMENTS TO THE UNITED STATES.

A statement of the shipments to the United States follows, giving in detail the more important articles.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Beeswax.....pounds..		37,610	29,720	38,059	35,172		\$10,339	\$8,585	\$11,539	\$10,131
Bones, hoofs, horns, etc.....						\$1,961	840	532		1,173
Chemicals, drugs, dyes, etc.....						6,651	2,748	3,679	14,530	20,111
Coffee:										
Green or raw.....pounds..	1,310,432	1,753,119	2,350,786	2,705,144	2,128,968	157,137	211,535	288,423	346,041	335,641
Roasted or prepared.....do..	229	788	305	1,782	2,952	43	133	84	466	702
Cotton, raw, sea island.....(bales..				34	21				2,675	880
{pounds..				13,533	6,805					
Fertilizers.....tons..		22	6	13,255	879		325	120	6,105	15,940
Fibers, unmanufactured: Sisal.....do..			150	151	334			18,997	15,096	34,499
Fruits and nuts:										
Bananas.....bunches..				170,645	200,450				99,917	122,754
Pineapples.....									40,411	50,316
All other green, ripe, or dried fruit.....						160,944	211,331	215,699	6,148	27
Pineapples, canned.....						632,277	1,229,647	1,548,880	2,020,800	2,567,564
Pineapples, preserved.....									1,061	18
All other fruit.....						3,473	5,470	8,081	3,980	3,156
Nuts.....						492	344	1,725	901	207
Hides and skins, other than furs:										
Caliskins.....pounds..					13,418					1,035
Hides of cattle.....do..	928,399	1,444,120	1,334,921	1,434,103	1,310,845	87,599	144,837	139,105	121,037	103,963
All other.....do..					60,585					5,452
Honey.....								32,703	52,004	35,973
Household and personal effects.....							2,112	1,410	1,651	6,338
India rubber, crude.....									60	3,811
Musical instruments.....							682	873	2,020	5,614
Natural history specimens.....							92	3,125	135	5,000
Paper, and manufactures of:										
Books, maps, engravings, etc.....						9,732	10,717	6,438	10,392	6,703
All other.....						5,392	1,142	425	500	994
Pineapple juice.....								10,627	224,131	136,982
Rice.....pounds..	3,038,624	5,823,585	5,859,331	6,665,330	4,674,617	140,768	255,210	269,157	290,078	212,146
Rum.....proof gallons..				1,286	9,064				2,545	8,358
Straw and palm leaf, manufactures of.....						1,419	1,208	684	1,096	894
Sugar and molasses:										
Molasses and sirup.....gallons..	23	728	100	1,801,796	1,734,318	20	79	7	89,708	77,241
Raw sugar.....pounds..	1,054,395,987	983,090,128	1,073,352,166	988,607,458	1,172,510,960	38,603,138	35,487,912	40,579,141	35,612,887	48,143,530
Refined sugar.....do..	23,174,650	39,773,800	37,242,300	22,608,400	32,954,550	1,212,924	2,144,830	2,045,921	1,091,769	1,817,979
Tobacco:										
Unmanufactured, leaf.....pounds..		6,697	18,402	5,685	187,278		4,241	15,644	4,114	94,978
Manufactured, cigars.....M..	54	9		1		2,177	130		40	

Vegetables.....						7,898	10,071	8,850	11,586	4,882
Wood, and manufactures of.....						60,763	102,435	155,603	146,878	64,097
Wool, raw.....						58,133	52,448	56,425	53,140	61,780
All other articles.....										28,354
Articles, the growth, produce, and manu- facture of the United States, returned.....						442,767	504,182	19,763	26,996	
Total.....								720,582	867,758	1,066,593
Shipments of foreign merchandise from Ha- waii to the United States.....						41,595,708	40,395,040	46,161,288	41,180,195	55,055,816
Grand total.....						44,797	37,905	21,977	27,456	20,254
						41,640,505	40,432,945	46,183,265	41,207,651	55,076,070

PORTO RICO.

CHRONOLOGICAL SUMMARY.—1493, discovered by Christopher Columbus; 1898, occupied by forces of the United States, and, a few months later, definitely transferred by Spain to this country by the treaty signed in Paris, on December 10, 1898.

GENERAL PHYSICAL CHARACTERISTICS.

The island is thus described in the census report submitted by Inspector General J. P. Sanger, in 1899:

Porto Rico, the easternmost and smallest of the Greater Antilles, is within the Tropics, between latitudes $17^{\circ} 50'$ and $18^{\circ} 30'$ north, and longitudes $65^{\circ} 30'$ and $67^{\circ} 15'$ west. It is in shape rudely rectangular, its longest axis lying east and west. Its length is a trifle over 100 miles and its breadth about 36 miles. Its area is approximately 3,600 square miles, three-fourths the size of Connecticut. The structure of the island is simple. Passing across it from east to west, a little south of the middle of its breadth is a broken, irregular range of hills or low mountains which toward the eastern end trends northward and terminates near the northeastern corner of the island, where it culminates in the peak of El Yunque, 3,609 feet in altitude. Elsewhere it ranges in altitude from 2,000 to 3,000 feet, with occasional summits slightly above 3,000 feet and gaps slightly below 2,000 feet. From its crest the land slopes northward and southward in broad undulations, deeply cut by streams, giving most of the interior of the island a steep, hilly surface, gradually becoming more nearly level until near the coast it spreads into broad, level "playas." This range forms the water divide of the island, and from it streams flow northward and southward, those flowing northward having much the longer courses and greater slopes. None of these streams is navigable, excepting for a very few miles near their mouths, where they are in effect estuaries. On the south the dividing ridge descends steeply, with short spurs and a narrow coastal plain. Here the streams are short, with very steep descents.

The coast is low and for the most part simple, with few good harbors, the best being that of San Juan, on the north coast. Unlike that of Cuba, the coast of Porto Rico is not bordered by fringing reefs or islets. The forested areas are small and are almost entirely confined to the higher parts of the mountains.

CLIMATE.

The Register of Porto Rico for 1910, officially published, thus reports the climate of the island: Porto Rico, in common with all islands within the areas swept by the northeast and southeast trade winds, has a warm but equable and comfortable climate. The records show a mean annual temperature of 76° ; during the coolest month the average is 73° , and during the warmest month it is 79° . The average is about 2° higher for the towns and cities of the coast, and is 3° or 4° lower in some of the places on the inland hills. The maximum temperature on the coast and in the interior valleys ranges from 95° to 100° , and at inland hill points the range is from 90° to 95° . Only on three occasions in 10 years was a temperature of over 100° recorded at any of the more than 40 stations on the island. These are, of course, shade temperatures.

The Register states that the average annual rainfall for the entire island is 77.30 inches. The annual amounts vary greatly from year to year and in geographical distribution. In the Luquillo Mountains, in the northeastern part of the island, the average annual amount

exceeds 135 inches. Along portions of the south coast the average is less than 40 inches. The fall on the north coast is about 65 inches; along the west coast, about 75 inches; and along the east coast, about 85 inches. There are no well-defined wet and dry seasons on the island. The rains, while frequently very heavy, are usually of short duration. The average duration of a shower is probably not more than 10 or 12 minutes, although on many occasions a series of intermittent showers will extend over a period of an hour or two. During the last 40 years the centers of only three hurricanes have passed over Porto Rico, although they frequently pass near enough to cause heavy rains over some portions of the island. Rain occurs in some quantity over some portions of the island practically every day in the year.

SOILS.

Mr. Robert T. Hill, of the United States Geological Survey, divides the soils of the island into two groups, namely, the red mountain soils and the calcareous foothill soils. Of these he says:

The mountain soils are the residuum of the black basic volcanic rocks, the red color being derived from the iron in these rocks, the clay from the feldspars. This red soil resembles in color and tenacity the red-clay regions of the southern Appalachians, but is derived from quite different rocks and is apparently much richer in phosphates and lime. The mountain soil is one of the most marked features of the island, and to it are largely due many of its agricultural and forest conditions. Naturally rich in plant food, this soil is further improved by the vast amount of humus derived from the accumulated vegetal debris of past centuries. The calcareous soils of the foothills are of the open-textured white-limestone type, which abounds from Florida southward. The alluvial lands along the coast and extending up some of the valleys are the product of the denudation of the uplands, consisting in most cases of an admixture of the red soil of the volcanic region and the calcareous soil of the limestone region, making together a rich red loam. These alluvial soils constitute the sugar lands, and Porto Rico's sugar-producing capacity can be measured by their areal extent.

POPULATION.

The population of the island, as shown by the census of 1910, is 1,118,012, an increase from 953,243 in 1899. The average number of persons to the square mile is therefore 325.5, which is about the same as the average number in New Jersey, less than that in Rhode Island and Massachusetts, and greater than that of any other State in the Union. Rhode Island has an average of 508.5, Massachusetts 418.8, and New Jersey 337.7. Unlike those States, however, a large percentage of the Porto Ricans is classed as "rural," that is, as resident in towns or villages of less than 2,500 inhabitants. On that basis, Rhode Island shows 96.7 per cent of its people classed as "urban," or resident in places of 2,500 or more inhabitants; Massachusetts shows 92.8 per cent, and New Jersey 75.2, while Porto Rico shows 20.1 per cent urban and 79.9 per cent rural.

There were in 1910, as in 1899, two cities of more than 25,000 population; San Juan with 48,716 and Ponce with 35,005. In 1899, Mayaguez was the only city in the 10,000 to 25,000 class; in 1910, Caguas, with 10,354, entered the group with Mayaguez, which had 16,563. There was an increase from 5 places to 7 in the 5,000 to 10,000 class, and an increase from 9 to 19 in the 2,500 to 5,000 class. About three-quarters of the entire population are resident in small villages or hamlets, or scattered in regions more or less isolated.

The Register for 1910 states that there are among the inhabitants many evidences of original Indian admixture, and the Carib physiognomy is occasionally apparent. In the early part of the sixteenth century a large number of African slaves were introduced, and as a consequence this mixture forms an important element among the laboring classes.

RESOURCES AND INDUSTRIES.

The industrial situation in the island was briefly and comprehensively described by the Hon. Beekman Winthrop in his official report as governor of Porto Rico in 1906. He said:

Manufactures play as yet but a trivial part in the island's fortunes. It is true that cigar manufacturing, hat making, fruit canning, and linen embroidery contribute to support a growing number of families, but even these industries, with the exception of the last named, are largely dependent upon agricultural development. The economic life of the island is so closely allied to the results of the harvest that too much stress can not be laid upon the importance of agriculture. The mineral resources of the island are in all probability but slight. For years to come manufactures must necessarily be comparatively unimportant; finished articles will be imported from the United States or abroad, while the list of exports will be largely composed of raw sugar, tobacco, and coffee.

AGRICULTURE.

SUGAR PRODUCTION AND TRADE.

Under the Spanish régime, coffee was the chief staple of the island. The change in political conditions resulted in a decadence of the coffee industry and a great expansion of the sugar industry, which now holds a long lead in Porto Rican activities. As raw sugars from the island enter the markets of the United States free of duty they hold a very marked advantage over competing sugars from Cuba, Java, and elsewhere, and this advantage has stimulated production.

A competent authority states that sugar cane was introduced in Porto Rico as early as the year 1515, having been brought from Hispaniola, where it was introduced by the Spaniards in 1506. In 1850, production was reported as approximately 50,000 tons. From that year until 1902, production ranged from about 25,000 to about 75,000 tons yearly. An act became effective in July, 1901, by which the products of Porto Rico entered this country free of duty. Factory methods were changed, new mills were erected, and plantings widely extended. The output of 1903 was nearly double that of 1897, the year preceding the American occupation. Further expansion of the industry followed in later years until shipments to the United States amounted, in the fiscal year 1912, to about 325,000 tons. As most of the land properly suited to cane production is now under cultivation, any material expansion of the industry beyond that of the present time will probably depend upon the introduction of more scientific methods of cultivation by which the average yield per acre will be increased.

The agricultural experiment station reported, in 1911:

While profits in sugar since the American occupation have been large, yet sugar production is a precarious business, and (in Porto Rico) without the sustaining tariff it would require greater skill and study than is now employed to keep the industry from lapsing into the condition prevailing during the Spanish régime. That the more progressive planters realize this is shown by the increased study of improved methods and the application of science to their industry. This is best exemplified in the recent establishment of the sugar planters' station, supported by a tonnage tax on the

industry, for the study of problems of sugar production. Permanent irrigation works on the south side of the island and tile drainage on the north will mean much for sugar production in the island.

COFFEE.

In the last 20 years the coffee industry of Porto Rico has suffered from three experiences, namely, competition with the more cheaply produced and inferior Brazilian coffee, in the production of which there has been an enormous expansion; the loss of protected markets in Spain and Cuba; and the disastrous hurricane of 1899. The crop shows wide variation from year to year. The average shipment to foreign markets from 1871 to 1880 was about 22,000,000 pounds yearly; from 1881 to 1890, about 36,000,000 pounds; and from 1890 to 1897, about 48,000,000 pounds. The total yield was somewhat greater, as allowance must be made for domestic consumption. The banner year prior to the American occupation was 1896, when 58,659,127 pounds were exported, the value being \$8,318,543.

For the last 20 years or so of Spanish control of the island coffee was the "cash crop" of thousands of the island people. It finds its best growth on the hillsides of the interior, in soil entirely suitable for it, but little or not at all suited to the production of any other crop. Thousands of small landholders or renters are resident in the hill country, and their comfort, if not their continued existence, there depended, and to some extent still depends, upon a market for coffee. In a memorial submitted to Congress by the coffee planters of Porto Rico in 1908 the statement was made that "one-half of the inhabitants of the island live in the interior and depend almost exclusively for their greater or lesser well being on the favorable or unfavorable outcome of the coffee crop."

The following comment appears in the report of Gov. Colton for the fiscal year 1912:

The coffee crop of 1912 was the largest in the history of the industry and sold at profitable prices, substantially a third higher than those of the year 1909-10 and several years preceding it. The value of the coffee sold abroad during 1911-12 was \$6,754,913, furnishing one-eighth of the receipts from foreign commerce. With the prosperity attending this industry, it is being extended throughout the mountains of the island, the soil and climate of which are especially adapted to the successful culture of the highest grades of coffee to be found in the world. Heretofore this product has gone principally to France and Cuba, where it is highly prized by the connoisseurs of those countries. Porto Rican coffee has never been known commercially in the United States, because, first, it commanded a ready market at the highest prevailing prices abroad, and, second, the small quantity sent to the United States has not been placed on the market in form to be identified. It is now, however, being introduced into the American market through the commercial agency of the government of Porto Rico in hermetically sealed tins under the special guaranty of the Porto Rico Association. The government has taken an active interest in this undertaking, through its commerce commission, in the belief that if it were known that one of the finest coffees produced in the world is grown on American soil it would be appreciated by American consumers looking for the best and find a steady demand in the home market, where it will not be subject to foreign tariff caprice.

American purchases of the Porto Rican berry are still quite inconsiderable, although showing in the last few years a decided increase. This market, in which an average of about 900,000,000 pounds of coffee are consumed yearly, should and easily could absorb the entire Porto Rican output. The imports of recent years have been: 1909, 126,684 pounds; 1910, 163,350 pounds; 1911, 248,941 pounds; and 1912, 414,656 pounds.

TOBACCO.

While tobacco has been a commercial product in Porto Rico for many years, the industry prior to the American occupation was conducted on a scale so small that comparatively little attention was paid to it in official reports. There was a local consumption estimated at 1,000,000 pounds, more or less, a year, and an export trade in leaf tobacco varying widely from year to year, but averaging 4,000,000 or 5,000,000 pounds. A few years after the occupation, American capital became interested in the growing of tobacco and the manufacture of cigars in the island. More than 17,000 acres are now under cultivation, and the census for the calendar year 1909 shows more than 7,000 wage earners employed in the manufacture of cigars and cigarettes. The increase in cigar exports is notable. The average shipments for 1902, 1903, and 1904 were about 66,000,000; the average for 1910, 1911, and 1912, about 160,000,000. The special agent in charge of the Porto Rico Agricultural Experiment Station in 1910 reported that the industry is likely to show a great increase, as the supply of labor is large and, moreover, is of a class singularly adept in making cigars and cigarettes.

Gov. Colton, in his report for 1912, states that the tobacco demand of that year exceeded the supply, and the agricultural experiment station reported in 1911 that, while the best tobacco lands are perhaps already closely planted, there will doubtless be a much greater increase in the manufacture of tobacco.

In this connection it may be said that the tobacco interests of Cuba are reported as greatly exercised over the shipment of Porto Rican tobacco to the United States. It is claimed that a large part of the 4,000,000 to 5,000,000 pounds of leaf imported by this country is made into cigars and sold as "Havana filler." Whatever the name under which the commodity is sold here, the fact stands that about 4,500,000 pounds of Porto Rican leaf now comes to this market annually. The Register for 1910 reports:

The soils best suited for tobacco growing in Porto Rico are somewhat limited in extent. As a rule, they are confined to the valleys of the interior and the adjacent hills. In general, the percentages of clay and silt are rather high, and where this is excessive the tobacco is too heavy to meet the market demands of the United States. The methods of fermentation now followed approach those of Cuba, and have resulted, as a rule, in greatly improving the product. The modern development of tobacco growing in Porto Rico is the practice of planting it under cheesecloth. This is done for the purpose of producing wrappers. Tobaccos so grown have a finer texture, are thinner, and much freer from holes. Experiments with fertilizers indicate that the crop can be greatly improved by their use, and a great stride has been made in more rational methods of fertilizing the crop.

CITRUS AND OTHER FRUITS.

Fruit production for over-sea shipment on anything approaching a commercial scale had its real beginning in 1903. Since that time there has been material gain, and external sales now show a value of about \$2,500,000 yearly. Oranges, grapefruit, and pineapples are produced of superior quality and with fair profit to producers. There has been trouble about packing, grading, and sales through commission houses at this end, but these matters have been adjusted or are in process of adjustment. Gov. Colton reports, for the fiscal year 1912, as follows:

Fruit raising in Porto Rico is rapidly becoming one of the principal industries of the Territory. The producers are cooperating to secure the highest efficiency in

packing and marketing and are receiving the active assistance of the Porto Rico Commerce Commission in securing the recognition to which the quality of their products entitles them. The first community packing house was erected last year (1911) and is now in successful operation, giving its patrons every expert service required from the field to the market, including picking when desired by the owner.

In its report for 1911 the agricultural experiment station declares that "Porto Rico is destined to be an immense tropical garden, a greenhouse for the eastern seaboard cities of the United States." The same authority declares:

The growth of the fruit industry in Porto Rico during a decade has been nothing short of marvelous. The planted groves are really only just beginning to bear. Fruit growing is destined to be one of the leading industries, and in a few years it may surpass sugar in the value of the output. The grapefruit of Porto Rico is meeting with great favor, and the quality of the oranges will become more evident as the trees grow older.

The records of exports do not give accurately the total value of fruits produced, but they may be used to indicate the development of the fruit industry in recent years. The total value of fruit shipments has increased from less than \$300,000, in 1902, to at present nearly \$2,500,000. In that time the value of oranges shipped has risen from a little more than \$50,000 to \$600,000; the value of coconuts from about \$12,000 to \$300,000. In 1905 pineapples were included in "all other fruits," with a comparatively inconsiderable shipment. Exports of fresh pineapples to the United States in 1912 were valued at \$683,800, and of canned pineapples at \$258,671. Grapefruit shipments were first separately reported in 1907, with sales amounting to about \$7,500. In 1912, they amounted to \$525,000.

At the agricultural station experiments are going on in many directions in an effort to introduce new types and improve old types. Among the products under trial at present, or hitherto, are strawberries, melons, vanilla, avocado, cacao, mango, banana, rubber, honey, and numerous others. In fact, as reported by the station, "agriculture in Porto Rico since the American occupation has been pioneering." This is almost as true of sugar, coffee, and tobacco as it is of strawberries, rubber, and cacao. The station reports (1910) that "among the miscellaneous products the coconut brings the greatest revenue into the island. The nuts are of superior quality, easily grown, and bear abundantly. It is almost impossible to buy a bearing grove, and the soils best adapted to the crop are pretty well taken up." Sea-island cotton is grown in limited quantity and in careless manner by a few planters. Effort is being made to extend the industry and to place it on a better basis. Experiments have been tried with rubber, but the results have not been encouraging. Much the same may be said for experiments with cacao.

Production from the soil of Porto Rico, whether sugar, coffee, tobacco, fruits, or vegetables, is a somewhat strenuous enterprise. Some of the adverse forces are being, or ultimately will be, controlled; but with the best that science can do for him, through drainage or irrigation or the control of blights and insect pests, there will remain enough to keep the planter active and interested.

GENERAL FARM DATA.

The total number of farms in 1889 was 39,021, as compared with 58,371 in 1910. The land thus occupied in 1910 was valued at a

little less than \$75,000,000. The total farm area of that year was 2,085,162 acres, of which 1,570,000 were classed as "improved." This was an increase, in 10 years, of 18.6 per cent in total farm acreage and of 228.5 per cent in improved acreage. The average acreage per farm decreased from 45 to 36 acres. Of the total farm area (2,085,162 acres), 1,457,345 acres are controlled by owners, 401,747 by managers, and 226,070 acres occupied by tenants. More than 35 per cent of all the farms are not over 4 acres in size; about 20 per cent are between 5 and 10 acres; about 17 per cent are from 10 to 20 acres; and about 15 per cent are from 20 to 50 acres. The remaining 13 per cent are large plantations, of which 332 are between 500 and 1,000 acres in size, and 207 in excess of 1,000 acres. The general condition is one of small farms occupied by owners. About 80 per cent of the total number of farms are so occupied, with about 18 per cent occupied by tenants. Out of 46,779 owned farms, only 2,381 are reported as mortgaged.

MINING.

There are legends of great quantities of gold taken from Porto Rico's streams in the early days by the Spaniards, and small quantities are obtained even now. Numerous claims have been filed, but thus far there have been no discoveries that even approach commercial quantity. Many claims have also been filed for other metals—iron, copper, lead, and manganese. There are copper outcrops all along the central range of hills and it is possible that some of them may yet become paying properties. Specular and magnetic iron are reported in different localities and claims have been made of deposits of lead and argentiferous galena. There are also stories of tin, platinum, and mercury. Thus far there has been practically no mining on a commercial scale and not enough is known of any of the alleged deposits to warrant prediction of either the success or failure of those who may essay their exploitation.

FORESTRY AND FISHERIES.

The 1899 census of the islands reports that "the forested areas are small and are almost entirely confined to the higher parts of the mountains." Even in those localities, outside of the Luquillo Forest Reserve in the northeastern part of the island, there is little or no timber for commercial purposes. Mr. Robert T. Hill, reporting as an agent of the United States Forest Service, says:

The island, although wooded in the sense that it is still dotted by many beautiful trees, is largely deforested from a commercial point of view. At the time of its discovery it was doubtless covered by forests of many species of trees, but these forests can hardly be said to exist at present, except in the summit portion of El Yunque, in the Sierra Luquillo, where there are about 8 square miles of virgin forest. A few insignificant patches of culled forest also occur in the central and northwestern portions of the island. With a population of a million living on 3,435 square miles, or 277 to the square mile, the existence of extensive forests is practically impossible under present conditions of agriculture.

Many species of excellent food fishes are native to Porto Rican waters, but there is no fishing industry except that of an indifferent supply of fresh fish for local consumption. Dried and salted fish are imported in important quantities from the United States and Canada.

MANUFACTURES.

With the exception of cigar and cigarette making and the conversion of cane juice into raw sugar, there are no extensive manufacturing industries in Porto Rico. Out of 15,582 wage earners reported as employed in manufacturing establishments, more than 12,000 are engaged in the sugar mills and tobacco factories. The census of 1909 shows a total of 939 concerns in which 18,122 persons are engaged as proprietors, salaried employees, or wage earners. The capital invested is given as \$25,544,000 and the value of products as \$36,750,000. Sugar and molasses represent \$20,569,000 out of this total, and tobacco manufactures represent \$6,060,000. The cleaning and polishing of coffee accounts for \$5,053,000, but that industry gives employment to only 120 hands in 37 mills.

The sugar business engaged in 1909 an average of more than 5,000 wage earners in 108 concerns, and the tobacco business engaged more than 7,000 in 282 concerns. These do not include those employed in the fields. The bakers stand next on the list, with 1,197 employed in 258 concerns, showing a product value of \$1,730,000. There is little home baking on the island. The kitchen apparatus is adapted to boiling, broiling, frying, etc., but seldom to baking. Fourteen concerns employing a total of 58 hands produced, in that year, distilled liquors to a value of \$1,117,000.

The remaining industries are relatively inconsiderable and include a variety and considerable number of small concerns engaged in such lines as these: Printing and publishing, lumber and timber, boots and shoes, foundry and machine shop, straw hats, leather, bay rum, brick and tile, pineapple canning and preserving, carriages and wagons, chocolate and cocoa products, ice, lime, salt, cigar boxes, brooms, matches, mineral and soda waters, pottery and fire clay products, etc. All of these are on comparatively small scale, although in their aggregate employing several hundred hands and producing merchandise of a value of several millions of dollars. There is little present probability of any extensive manufacturing industry in the future.

OUTPUT OF CIGARS AND CIGARETTES.

The product of the cigar and cigarette industry is officially reported thus for the fiscal years stated:

Years.	Cigars.			Cigarettes.		
	For consumption.	For export.	Total.	For consumption.	For export.	Total.
1907.....	74,698,430	132,669,823	207,368,253	347,722,000	10,460,000	358,182,000
1908.....	76,983,830	103,781,719	180,765,549	354,407,900	11,232,424	365,640,324
1909.....	84,933,260	140,302,271	225,235,531	365,525,500	11,244,500	376,770,000
1910.....	92,700,160	151,724,438	244,424,598	393,844,300	13,142,000	406,986,300
1911.....	101,064,495	174,743,098	275,807,593	459,710,045	11,760,000	471,470,045
1912.....	111,682,615	169,765,656	281,448,271	532,431,000	¹ 11,293,350	¹ 543,724,350

¹ Treasury figures.

TRANSPORTATION AND FINANCES.

The Spanish Government projected and constructed parts of a narrow-gauge belt-line railway intended, when complete, to follow generally the coast line of the island. At the time of the occupation, in 1898, by the United States about 160 miles of this line was in operation, a part on the south coast, a part on the west coast, and another part on the north coast. These sections have now been connected, and a line is in operation from Carolina, east of San Juan, to Ponce via Arecibo, Mayaguez, and Yauco, with a connection at Ponce to Guayama. A line also runs from San Juan southward to Caguas. At the time of the occupation there was also a highway system, most of it admirably constructed, with an aggregate of nearly 300 miles. This system has been maintained and its mileage a little more than doubled under the American administration. Highways, most of them good and some of them excellent, now reach all of the important cities and towns of the island, and open to cultivation a large area hitherto unproductive. Along the various roads, steel and masonry bridges have been and are being constructed as rapidly as the available finances make construction possible. There will be in time additional railway mileage, but it must wait until advancing industry warrants the considerable expense of building railways among the hills and mountains.

In his report for the year Gov. Colton states that at the close of the fiscal year 1912 there were 1,069 kilometers (about 665 miles) of Territorial roads suitable for motor vehicles under maintenance.

There is express company service between the island and the United States and to all the important cities and towns of the island. The mail service is maintained by the Post Office Department of the United States, and offices throughout the island, with few exceptions, receive daily mails, and many of them are served twice daily. The telegraph service is under the control and operation of the insular government. Private concerns control the telephone service, which is in operation in all of the principal places. The island has had cable connection with the rest of the world for many years.

The assessment of 1912 shows the value of property as \$178,275,000 and the total indebtedness of the insular government as \$4,139,760.

COMMERCE.

PORTO RICO AS A BUYER.

The commercial expansion of Porto Rico since the American occupation has been quite remarkable. It is shown in both the import and the export trade.

Imports for the five years immediately preceding the occupation in 1898 averaged about \$18,000,000 a year; in 1912 they amounted to \$43,000,000. In any statement of the trade movement in the island it is necessary to take into consideration the effect of the devastating hurricane of 1899, by which all suffered severely, while about one-fourth of the entire population lost, literally, all of their possessions. The effect on the coffee industry, then the principal source of revenue for a large percentage of the islanders, was not only the loss of a crop, but also the destruction of the groves.

DISTRIBUTION OF IMPORT TRADE.

Ninety per cent of the total imports of Porto Rico for the last five years have come from the United States. The leading imports from Spain have been as follows for the last three fiscal years:

Articles.	1910	1911	1912
Cotton, manufactures of.....	\$42,196	\$82,339	\$74,526
Olive oil, edible.....	118,978	103,503	148,652
Paper, and manufactures of.....	80,921	73,280	73,102
Wines.....	53,613	47,533	59,888
Vegetables.....	141,468	151,626	105,927
All other articles.....	271,397	333,012	381,025
Total.....	708,573	791,293	843,120

The import movement of the last 12 fiscal years has been as follows:

Years.	From United States.	From other countries.	Total.	Years.	From United States.	From other countries.	Total.
1901.....	\$6,965,408	\$1,952,728	\$8,918,136	1907.....	\$25,686,285	\$3,580,887	\$29,267,172
1902.....	10,882,653	2,326,957	13,209,610	1908.....	22,677,376	3,148,289	25,825,665
1903.....	12,245,845	2,203,441	14,449,286	1909.....	23,618,545	2,925,781	26,544,326
1904.....	11,210,069	1,958,960	13,169,029	1910.....	27,097,654	3,537,201	30,634,855
1905.....	13,974,070	2,562,189	16,536,259	1911.....	34,671,958	4,115,039	38,786,997
1906.....	19,224,881	2,602,784	21,827,665	1912.....	38,470,963	4,501,928	42,972,891

In 1910, 1911, and 1912 purchases have been made from Belgium, of, respectively, \$97,340, \$99,949, and \$87,507, the most important line being manufactures of iron and steel. Imports from Denmark have been \$67,127, \$108,737, and \$97,593, of which amounts about 90 per cent is represented by butter. France supplied fertilizer to a value of nearly \$400,000 for the period, and miscellaneous wares to a total of \$800,000, the imports for the respective years being \$354,469, \$435,024, and \$409,278.

Germany sold fertilizers to the amounts of \$313,674, \$299,225, and \$318,492; manufactures of iron and steel to the amounts of \$56,681, \$125,772, and \$100,770; and miscellaneous merchandise to the amounts of \$123,501, \$161,578, and \$182,461; the totals for the years being \$493,856, \$586,575, and \$601,723.

Italy supplied wines and sundry articles valued at \$76,611, \$80,847, and \$105,446. The Netherlands sold to the amounts of \$164,314, \$252,596, and \$218,435, nearly all of which was cheese.

The sales of the United Kingdom were as follows:

Articles.	1910	1911	1912
Cocoa and chocolate.....	\$45,927	\$59,399	\$78,921
Vegetable fibers, and manufactures of.....	63,230	55,749	60,749
Manufactures of iron and steel.....	132,301	138,930	128,664
All other articles.....	124,783	169,731	222,245
Total.....	366,241	423,809	490,579

The islanders are consumers of large quantities of dried and salted fish, a part of which comes from the United States and a much larger part

from Canada. The purchases of Canadian fish for 1910, 1911, and 1912 were valued at \$475,217, \$563,604, and \$659,487, while lumber and other articles, with the fish, made up a total trade of \$555,729, \$609,381, and \$699,731. The receipts from Cuba consist largely of lumber, cedar for cigar boxes, etc., and average about \$50,000 a year. Dried meat forms much the greater part of imports from Uruguay, valued at \$199,341, \$187,212, and \$149,444. Jute bags and bagging were brought from British India to a value of \$109,406, \$127,399, and \$295,591. The trade with other countries, all of it relatively small, brings the total imports from countries other than the United States up to the figures given in a preceding table.

GAIN IN TRADE WITH FOREIGN COUNTRIES.

The trade with other lands shows a decided gain, but it is only a little out of proportion to the increase in the trade with this country. Most of it is a trade that could be secured only by the imposition of duties almost prohibitive, and some of it is the expression of old customs and habits not easily shaken off. There is no readily acceptable substitute for the familiar wines and olive oil of Spain, the dried meat of Uruguay, the butter of Denmark, and the cheese of the Netherlands. The demand for salted and otherwise preserved fish far exceeds our surplus for export. France and Germany supply fertilizers in Porto Rico as they do in Hawaii, because they supply at fairly satisfactory prices the kind that is wanted and needed. The iron and steel from the United Kingdom, Belgium, and Germany consists in a large part of machinery for sugar mills, an industry in which foreign competition with American makers is sharp and frequently successful in other markets than that of Porto Rico. As the same tariff schedule applies to both the islands and the United States mainland, it is perhaps as reasonable to hold that no foreign-made goods should enter this country as to hold that none should enter Porto Rico. The merchants of the island buy, as do those of the mainland, where they can buy to the best advantage.

IMPORTS FROM THE UNITED STATES.

The imports of domestic merchandise from the United States, by classified groups, have been as follows during the last five fiscal years:

Groups.	1908	1909	1910	1911	1912
Foodstuffs in crude condition, and food animals.....	\$4,039,704	\$4,075,271	\$4,502,265	\$4,793,291	\$5,928,625
Foodstuffs partly or wholly manufactured.....	5,403,797	5,519,417	6,755,613	7,603,175	8,189,455
Crude materials for use in manufacturing..	722,436	766,708	657,061	682,927	845,332
Manufactures for further use in manufacturing.....	1,448,417	1,248,239	1,671,485	2,574,131	2,762,970
Manufactures ready for consumption.....	10,730,439	11,653,448	12,877,635	18,036,643	19,615,340
Miscellaneous.....	15,573	9,087	14,047	84,096	82,823
Total.....	22,360,366	23,272,170	26,478,106	33,774,263	37,424,545

These figures show a striking gain in the trade in manufactured goods, but they also show a large gain in the importation of foodstuffs into a distinctly agricultural country. To the imports of foodstuffs from this country there must be added the imports from other

lands. It is true that some of these commodities, such as wheat flour, rice, salt fish, lard and other hog products, etc., can not be produced in the island, if at all, in quantity sufficient to meet the demand, but a per capita expenditure of about \$12.50 for imported foodstuffs seems excessive. On that basis the food imports of the United States would considerably exceed a billion dollars.

In the fiscal year 1912 imports of rice from the United States amounted to 134,648,403 pounds, valued at \$4,894,747, or about 120 pounds for every man, woman, and child in the island. Imports of wheat flour were about 60 pounds per capita. Dried and salted fish and pickled pork are imported in many millions of pounds. While the products of Porto Rico are distinctly agricultural, it is evident that the islanders find it more to their economic advantage to produce their agricultural specialties, sugar, tobacco, and cigars, and fruits, for export and to buy a considerable part of their food requirement. Inasmuch as the imports of foodstuffs have increased enormously in the last few years, it is fair to infer that the people of the island are, as a whole, much better fed than they were in earlier years. The very greatly increased purchases of clothing and footwear are ample evidence that they are also better clad.

The increase of our sales to Porto Rico will depend mainly upon the increase in the output of sugar, a condition controlled by the planters, and upon the increase in the American demand for Porto Rican coffee, cigars, tobacco, and fruits. The supply of these articles will be regulated mainly by the market demand here.

The purchases from the United States during the last five years appear in the table following.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Furniture of metal.....						\$38,910	\$26,977	\$42,822	\$64,224	\$74,721
Furs and fur skins.....						29,740	15,307	43,761	82,153	76,869
Glass and glassware.....						90,813	113,158	127,520	140,481	175,621
Gold and silver, manufactures of.....						1,203	482	1,426	2,903	3,219
Grease, lubricating and other.....						13,285	13,363	15,180	18,876	25,075
Hair, and manufactures of.....						449	1,010	1,851	8,827	9,923
Hay.....	1,031	642	606	754	709	24,001	12,264	11,962	15,939	17,734
Household and personal effects ¹									21,523	47,504
India rubber, manufactures of:										
Belting, hose, and packing.....						7,930	9,277	9,129	12,017	19,485
Boots and shoes.....	974	715	2,701	1,972	1,519	1,219	308	2,031	1,052	1,198
Automobile tires ²									85,008	150,535
All other tires ²									34,248	77,600
All other rubber.....						43,553	69,936	104,499	110,512	93,226
Ink.....						5,627	5,353	8,355	10,176	11,704
Instruments and apparatus, electrical and for scientific purposes:										
Electrical appliances, including telegraph and telephone instruments.....						125,221	79,141	142,988	144,447	250,201
All other ³						38,758	42,093	23,193	42,378	38,936
Iron and steel, manufactures of:										
Pig iron.....		25	6	25	28		620	110	430	474
Bar iron.....	620,755	332,056	576,329	663,645	400,198	15,852	6,861	12,792	12,815	6,362
Bars or rods of steel.....	1,290,954	557,294	1,748,451	2,961,091	4,618,724	30,816	11,482	37,679	63,117	70,546
Railway rails.....	4,722	3,731	4,859	6,999	6,324	152,030	108,964	144,547	220,289	184,414
Iron sheets and plates.....	10,354,962	8,977,751	10,768,448	18,215,586	19,773,320	324,455	259,716	308,031	521,621	495,201
Steel sheets and plates.....	234,176	387,104	737,030	766,432	463,560	7,693	8,161	17,819	17,631	10,766
Tinplate,terneplate, and taggers tin.....	31,108	6,531	4,206	5,621		1,268	269	151	222	
Structural iron and steel.....	2,453	1,223	1,047	3,097	1,796	221,411	97,051	82,745	233,612	125,473
Wire.....	3,333,853	2,303,869	3,240,815	3,976,901	4,733,546	100,445	57,409	82,410	100,693	106,394
Locks, hinges, and other builders' hardware.....						88,976	75,606	60,070	95,193	59,940
Saws.....						2,507	2,429	2,958	5,764	9,005
Tools, n. e. s.....		107				72,640	57,349	65,208	105,598	112,575
Car wheels.....	521		180	176	8	4,844	877	1,489	1,262	100
Castings, n. e. s.....						26,280	26,289	60,167	26,221	41,471
Cutlery.....						16,656	15,603	30,225	31,486	38,530
Firearms.....						40,034	10,849	5,080	11,410	17,899
Machinery, machines, and parts of—										
Adding machines ⁴									5,123	11,943
Cash registers.....	65	94	163	400	443	8,386	15,932	13,005	30,707	25,088
Electrical machinery.....						77,937	63,832	32,749	64,668	60,690
Metal-working machinery.....						6,723	100	8,421	12,235	5,662
Mining machinery.....									528	
Printing presses.....						4,840	20,213	10,509	29,244	11,545
Pumps and pumping machinery.....						100,357	78,475	116,999	120,691	158,126

[illegible]

Included in "All other articles" prior to July 1, 1910.

2 In included in "All other articles prior to July 1, 1910."
3 In included in "All other manufactures of india rubber" prior to July 1, 1910.

³ Includes "Phonographs, graphophones, etc.," prior to July 1, 1909.

4 Included in "All other machinery" prior to July 1, 1910.

* Included in all other machinery prior to July 1, 1909.
 † Quantity not stated prior to July 1, 1909.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Naval stores:										
Rosin, tar, turpentine, and pitch.....	1,618	1,051	865	689	469	\$6,190	\$3,477	\$3,228	\$2,692	\$2,616
Turpentine, spirits of.....	15,297	14,592	17,580	8,633	4,918	8,733	7,750	8,491	6,086	2,536
Oil cake and oil-cake meal.....	5,051,865	364,918	1,100,603	1,605,709	2,029,390	62,345	5,584	16,722	23,342	28,300
Oilcloth.....						10,910	14,555	19,010	19,467	28,481
Oils:										
Animal.....	1,428	1,569	1,708	2,115	239	614	830	1,484	1,899	216
Mineral—										
Crude.....	24,937	3,654	3,938	6,286	5,359	2,100	256	211	381	440
Naphthas.....	280,640	332,576	688,614	1,001,884	1,260,327	44,144	61,151	124,043	128,647	161,289
Illuminating.....	1,607,514	2,040,302	1,749,257	2,570,938	1,945,640	171,014	236,830	204,368	247,298	179,751
Lubricating and heavy paraffin.....	276,993	202,879	237,318	358,738	494,677	63,206	74,465	80,241	98,634	132,009
Residuum.....		500	2,627	437	59,727		18	140	16	3,671
Vegetable—										
Cottonseed.....	301,635	201,871	329,712	470,704	777,593	24,346	14,822	25,796	36,001	22,280
Linseed.....	68,172	76,440	81,126	74,433	62,491	35,236	39,044	52,980	69,139	54,454
All other vegetable oils.....						22,891	25,508	21,278	13,132	16,935
Paints and varnishes:										
Varnish.....	6,100	6,174	6,371	5,949	7,241	5,189	5,233	6,182	7,315	7,950
All other.....						73,063	76,062	102,757	149,590	194,569
Paper, and manufactures of:										
Books, music, maps, engravings, etc.....						113,784	118,221	151,493	207,923	236,042
Paper hangings.....						830	2,189	1,673	2,270	
Playing cards.....						1,050	374	1,212	1,161	
Printing paper.....	993,435	686,774	1,000,948	1,200,265	1,460,311	40,712	32,115	39,313	41,657	47,204
Writing paper and envelopes.....						62,379	75,189	88,199	104,781	105,400
All other paper.....						143,820	152,795	185,451	198,437	250,302
Pencils.....						10,428	10,058	9,381		14,770
Perfumeries, cosmetics, and toilet preparations.....						29,336	42,832	55,240	72,324	91,463
Phonographs, graphophones, etc. ¹								39,128	32,902	24,570
Photographic goods ²								30,253	21,517	31,461
Plated ware.....								26,875	32,918	27,516
Salt.....	196,104	268,106	78,566		20,000	20,362	18,997	2,777	4,295	90
Seeds.....						2,288	3,185	2,777		4,444
Silk, manufactures of.....						139,026	149,313	254,476	320,099	345,401
Soap:										
Toilet or fancy.....						10,903	14,324	21,038	31,164	45,789
All other soap.....	8,571,299	9,732,655	10,150,562	11,207,790	12,547,846	348,733	392,970	410,765	502,610	555,192
Spirits, wines, and malt liquors:										
Malt liquors.....	303,923	284,836	342,276	420,084	577,495	185,404	173,557	197,316	223,710	286,057
Bourbon whisky.....	292	67			40	783	109			52
Rye whisky.....	1,792	1,618	2,437	3,065	2,063	5,008	4,993	6,073	8,338	6,471
All other distilled spirits.....	4,858	9,826	13,388	9,124	4,978	12,771	19,834	32,076	23,433	15,881
Wines.....	134,175	107,566	140,538	193,008	285,966	69,729	59,185	59,306	69,534	117,140
Starch.....	700,470	552,026	661,640	2,416,107	1,560,565	19,953	17,444	20,656	50,895	35,758

Stone (including marble), and manufactures of.....							9, 583	12, 787	11, 105	18, 629	31, 684
Straw and palm leaf, and manufactures of.....							23, 350	33, 684	58, 285	70, 621	80, 262
Sugar, molasses, and confectionery:											
Molasses and sirup.....gallons..	2, 736					2, 374	399	505	736	1, 516	1, 778
Refined sugar.....pounds..	6, 562, 279					8, 551, 283	299, 288	408, 653	438, 545	600, 038	754, 204
Confectionery.....							85, 459	132, 247	157, 188	171, 463	210, 162
Tin, manufactures of.....							39, 531	36, 941	68, 467	82, 849	80, 673
Tobacco, and manufactures of:											
Porto Rican leaf, returned.....pounds..											
Unmanufactured.....do..	782, 068	1, 165, 950	1, 455, 857	66, 252	3, 083, 712		305, 778	469, 032	325, 078	28, 556	422, 207
Cigars and cheroots.....M..	108	800	22	39	28		1, 682	26, 647	350	321, 042	341
Cigarettes.....M..	115	196	601	608	870		833	1, 321	2, 401	3, 948	6, 841
Plug.....pounds..	2, 308	3, 681	4, 885	5, 464			829	1, 184	1, 825	1, 988	
Smoking ³.....do..			46, 532	15, 802	19, 431		5, 531	7, 951	20, 327	7, 796	8, 352
All other.....									2, 173	1, 518	2, 696
Toys.....							31, 804	32, 485	58, 887	67, 632	51, 418
Trunks, valises, and traveling bags.....							10, 097	9, 314	14, 793		23, 220
Vegetables:											
Beans and dried peas.....bushels..	127, 507	144, 396	169, 692	185, 630	179, 131		283, 001	330, 764	473, 846	546, 129	543, 577
Onions.....do..	11, 005	22, 092	17, 854	27, 133	16, 446		13, 439	23, 498	18, 392	30, 509	25, 624
Potatoes (except sweet).....do..	135, 414	134, 323	172, 252	188, 197	141, 797		121, 607	128, 696	134, 037	150, 682	164, 410
Canned vegetables.....							17, 845	15, 262	20, 523	32, 482	43, 083
All other, including pickles and sauces.....							10, 819	10, 996	14, 736	16, 121	15, 427
Wood, and manufactures of:											
Logs and other wood timber ⁴.....M feet..					410		81, 954	3, 263	30, 142	14, 244	10, 388
Timber, hewn and sawed.....do..	685	3	875	624	793		24, 119	175	25, 012	18, 724	18, 895
Boards, planks, scantling, etc.....do..	19, 785	20, 983	30, 399	49, 888	57, 358		442, 940	411, 332	613, 503	997, 548	1, 168, 417
Shingles.....M..	200	553	61	1, 945	5, 556			2, 378	348	7, 805	19, 512
Box shooks ⁴.....number..					895, 175		97, 405	92, 311	141, 982	164, 843	104, 841
All other shooks.....do..	1, 273	4, 223	2, 082	2, 237	12, 371		11, 870	12, 893	6, 569	8, 201	21, 807
All other lumber.....							14, 668	45, 168	32, 627	86, 762	37, 508
Doors, sash, and blinds.....								6, 512	9, 412	11, 358	13, 369
Furniture.....							205, 086	215, 906	301, 547	378, 380	457, 650
Hogsheads and barrels, empty.....							77, 263	184, 142	62, 075		81, 335
Trimmings, moldings, etc.....							6, 672	5, 403	4, 925	3, 770	2, 988
Other manufactures of wood.....							153, 962	171, 630	183, 283	301, 504	264, 940
Wool, manufactures of:											
Wearing apparel.....							57, 000	24, 088	48, 021	97, 726	115, 382
All other.....							70, 954	54, 316	90, 814	125, 948	91, 246
Zinc, manufactures of.....							7, 271	2, 758	4, 269	4, 713	8, 988
All other articles.....							279, 463	185, 679	132, 211	216, 105	183, 768
Total.....							22, 360, 366	23, 272, 170	26, 478, 106	33, 774, 263	37, 424, 545
Shipments of foreign merchandise from the United States to Porto Rico.....							317, 010	346, 375	619, 548	897, 695	1, 046, 418
Grand total.....							22, 677, 376	23, 618, 545	27, 097, 654	34, 671, 958	38, 470, 963

¹ Included in "All other instruments and apparatus" prior to July 1, 1909.

² Included in "All other manufactures of tobacco" prior to July 1, 1909.

³ Included in "All other articles" prior to July 1, 1908.

⁴ Quantity not stated prior to July 1, 1911.

TREND OF IMPORT TRADE.

An analysis of the change in trade volumes is not necessary here. In almost every line there has been marked advance in the last five years and the larger purchases show clearly a decided upward movement in the social life of the people. More food and better food is wanted and is bought; more and better clothing is wanted and is bought; and there is marked increase in the trade in so-called luxuries.

Seventy-five automobiles were imported in 1908 and 441 in 1912. That has increased the imports of tires and gasoline. The battle with the "hookworm," in whose activities footwear is a highly important factor, and the improved financial condition of the people generally, have served to swell the sales of boots and shoes from \$500,000 in 1908 to \$1,300,000 in 1912. The marked increase in purchasing power is shown in the gain in manufactures of cotton, including cloth, clothing, and knit goods, from \$2,800,000 in 1908 to \$5,575,000 in 1912. Important and striking gains appear in many lines, in lumber and furniture, in fertilizers, patent medicines, cash registers, refined sugar, brooms and brushes, cement, glass and glassware, in mechanics' tools and agricultural implements, in typewriters and in jewelry, in writing paper and envelopes, soap, starch, and in tinware. The yearly requirements are increasingly those of a people who are, as a whole, enlarging both their wants and their ability to gratify them.

PORTO RICO AS A SELLER.

The exports for several years preceding the occupation show an average of about \$17,000,000 a year. The movement of recent years appears in the table following. During the earlier years of this period the coffee industry suffered from the effects of the hurricane of 1899, and from other influences that tended to depress all productive industry. The definite operation of free trade between the island and the mainland, in 1901, stimulated greatly the sugar industry and brought the tobacco industry and fruit growing to a position never before approached.

Years.	To United States.	To other countries.	Total.	Years.	To United States.	To other countries.	Total.
1901.....	\$5,581,288	\$3,002,679	\$8,583,967	1907.....	\$22,070,133	\$4,926,167	\$26,996,300
1902.....	8,378,766	4,055,190	12,433,956	1908.....	25,891,261	4,753,209	30,644,470
1903.....	11,051,195	4,037,884	15,039,079	1909.....	26,394,312	3,996,913	30,391,225
1904.....	11,722,826	4,543,077	16,265,903	1910.....	32,095,897	5,864,617	37,960,514
1905.....	15,633,145	3,076,420	18,709,565	1911.....	34,765,409	5,152,958	39,918,367
1906.....	19,142,461	4,115,069	23,257,530	1912.....	42,873,401	6,832,012	49,705,413

INCREASES IN THE EXPORT TRADE.

The present leading industries—sugar, coffee, and tobacco—were fairly on their feet in 1906, and since that year the exports of the island have more than doubled. Since that year exports of sugar have increased in value from \$14,000,000 to \$31,500,000; of coffee, from \$3,500,000 to \$6,750,000; of tobacco, from \$3,565,000 to \$7,500,000; and of fruits, from \$500,000 to about \$2,500,000. Nearly seven-eighths of the total exports of recent years have come to the United States. Exports of sugar were many times greater in 1912 than at any time prior to the occupation. Exports of coffee were

more than 70 per cent of the largest sales of any year in the days of Spanish rule, and coffee prices averaged as high as the average of the five years preceding the occupation. To shipments of leaf tobacco far above the average of those for the last five years under Spain, there has been added a \$5,000,000 export business in cigars, formerly shipped only in inconsiderable quantities. The grapefruit business is a new industry showing growth, in export value, from \$7,586 in 1907 to \$525,000 in 1912. Another new business, for export, is in pineapples, showing an increase from \$27,826 in 1906 to \$684,774 in 1912 in fresh fruit, and from \$42,186 in 1906 to \$258,671 in 1912 in canned fruit. The orange business has grown from \$84,475 in 1901 to \$295,633 in 1906, and to \$584,414 in 1912.

EXPORTS TO FOREIGN COUNTRIES.

Porto Rico's exports to countries other than the United States consist almost entirely of coffee. In such trade in the last three years, coffee represented \$17,288,000 in a total, for the term, of \$17,766,000. Very little of the excellent coffee of the island comes to this country, a market that should readily absorb all that the island can produce. The coffee business of the island for the last three fiscal years has been as follows:

Exported to—	1910	1911	1912
Austria-Hungary.....	\$833,604	\$369,302	\$749,377
France.....	552,511	323,480	401,178
Germany.....	231,630	46,382	81,777
Spain.....	1,050,070	875,837	1,207,614
Italy.....	377,517	319,631	481,092
Cuba.....	2,455,639	2,978,369	3,628,535
United States.....	21,876	35,726	71,104
All other countries.....	146,755	44,052	134,236
Total.....	5,669,602	4,992,779	6,754,913

EXPORTS TO THE UNITED STATES.

Among the miscellaneous exports of Porto Rican products to this country are sea-island cotton, coffee, fruits of various kinds, coconuts, hides and skins, honey, and manufactures of straw and palm leaf. Raw sugar represents, in value, about three-quarters of the total. For the 10 years preceding the transfer of the island to the United States, exports of sugar averaged about 60,000 tons a year. As a result of the free entry of the product to this country, the industry has expanded steadily and rapidly, the exports of 1912 having reached 367,145 tons. Tobacco, manufactured and in leaf, is the product of second importance. Shipments of leaf show variation from year to year for the last 20 years, but there has been no material increase in average exports. The evidence of the very considerable extension of the tobacco industry appears in the exportation of cigars, practically a new business that has grown from \$306,000 in 1901 to more than \$5,000,000 in 1912. Increasing attention is paid to the quality of material used, to workmanship, to grading, sanitary factory conditions, and to attractive packing. The Porto Rican product meets a demand for low-priced cigars, the average export price being only \$3 a hundred. The industry can be very considerably extended and it doubtless will be. Reporting for the year 1912, Gov. Colton stated that the demand of the year exceeded the supply.

The island has been for many years a shipper of fruits and coconuts on a comparatively small scale, the leading shipments being oranges, pineapples, and coconuts. The opening of the markets of this country has established, undoubtedly as a permanent industry, the production of these and other fruits on a large and increasing scale. The development of the grapefruit business has been particularly notable.

PORTO RICAN COFFEE IN THE UNITED STATES.

Elsewhere in this pamphlet the statement is made that the American market should readily absorb the entire crop of Porto Rican coffee. Gov. Colton, in his report for 1912, makes the statement that "Porto Rican coffee has never been known commercially in the United States because, first, it commanded a ready market at the highest prevailing prices abroad, and, second, the small quantity sent to the United States has not been placed upon the market in form to be identified." The coffee imports of the United States have averaged 900,000,000 pounds a year for the last five years, and about three-quarters of the supply came from Brazil. The remaining quarter came from many markets and practically all of it was of the class and quality known as "mild coffee," in which class the Porto Rican berry is included. These "mild" coffees can hardly be regarded as in competition with the Brazilian product because of the recognized and easily recognizable difference in their essential qualities. It may be said that the American market takes, annually, more than 200,000,000 pounds of coffee of the type and class of the Porto Rican product. Yet the total imports of the Porto Rican berry for the last five years have only a little exceeded 1,000,000 pounds. It is evident that the trade in this article might easily be extended greatly to the advantage of the people of the island and of the mainland. The total crop, at present, would supply only about a quarter of our purchases of coffee of corresponding quality and value. The special need of the industry appears to be an effective advertising campaign in this country.

FRUIT AND OTHER EXPORTS.

The fruit industry of the island is a very long way from its limit, notwithstanding its rapid growth in the last five or six years. With the enormous demand of the New York market, which can now be reached in five days from the island, the business in oranges, grapefruit, and pineapples can be and probably will be greatly extended. The same may be said of the coconut industry. In his report for 1912 Gov. Colton says: "While as yet of comparatively small total value the production of coconuts is one of the most profitable industries of the island and must gain greatly in importance as the waste lands are brought under cultivation." Present shipments of the nuts are valued at about \$300,000 annually.

Various articles appear on the export list that are produced either as a direct though small business or as incidents in some other industry, such as honey and beeswax and hides and skins. For the immediate future, at least, sugar, coffee, tobacco, and fruits will constitute a very large part of the island's export trade.

EXPORTS TO THE UNITED STATES.

The table following shows the exports of domestic merchandise from Porto Rico to the United States in the last five fiscal years.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Beeswax.....		8, 537	13, 328	15, 459	18, 262			\$3, 435	\$4, 078	\$5, 324
Bones, hoofs, horns, etc.....						\$2, 164	834	807	1, 777	812
Coffee, green or raw.....	129, 322	126, 634	163, 350	248, 941	414, 656	16, 157	17, 241	21, 876	35, 726	71, 104
Cotton, and manufactures of:										
Unmanufactured (sea island).....	181, 009	123, 858	62, 513	139, 109	185, 385	52, 600	36, 600	18, 150	41, 900	59, 342
Manufactures of.....						64, 382	46, 175	1, 739	11, 558	2, 059
Fruits and nuts:										
Fruits, green, ripe, or dried—										
Lemons ¹				958	1, 230				2, 322	3, 131
Limes ¹				482	207				1, 962	960
Grapefruit ¹				96, 189	118, 919				309, 698	524, 976
Oranges.....	308, 963	204, 234	296, 018	349, 431	277, 399	630, 666	401, 902	582, 616	703, 946	584, 368
Pineapples ¹									640, 713	683, 801
All other.....						425, 682	525, 441	725, 134	1, 334	8, 301
Canned pineapples ²								106, 587	149, 744	258, 671
Prepared or preserved.....						102, 988	127, 772	2, 009	5, 384	3, 549
Nuts.....	478, 093	610, 656	546, 074	623, 357	524, 401		202, 925	216, 015	253, 091	301, 970
Hides and skins.....						65, 853	95, 152	117, 617	115, 239	93, 243
Honey.....							9, 469	8, 018	17, 904	42, 251
Leather, sole.....		26, 063	30, 149	51, 234	12, 205		6, 897	7, 971	16, 417	3, 175
Meat and dairy products: Tallow.....	33, 850	19, 074	26, 471	39, 414	35, 567		1, 034	1, 500	2, 262	1, 941
Oils, vegetable.....						1, 985	5, 156	1, 214	1, 060	488
Perfumery and cosmetics.....						1, 251	70, 545	11, 500	27, 686	49, 189
Salt.....		10, 825	1, 120, 000	14, 951, 200	11, 061, 850	25, 659	112	1, 120	23, 254	20, 614
Seeds.....							22, 459	15, 807	7, 421	9, 726
Straw and palm leaf, manufactures of.....						30, 045	72, 036	105, 282	109, 404	138, 463
Sugar, molasses, and confectionery:						152, 244				
Sugar, molasses and sirup.....	4, 799, 213	8, 360, 013	9, 607, 926	8, 868, 860	10, 937, 670	265, 998	458, 861	593, 650	554, 228	700, 981
Molasses and sirup.....	469, 205, 082	488, 452, 733	569, 039, 881	645, 834, 403	734, 289, 872	18, 690, 149	18, 430, 750	23, 545, 665	24, 479, 159	31, 544, 063
Sugar, unrefined.....						4, 582	358	2, 482	515	
Confectionery.....										
Tobacco, and manufactures of:										
Unmanufactured—										
Leaf.....	4, 228, 708	3, 063, 761	2, 924, 175	3, 495, 544	4, 680, 781	1, 582, 559	1, 123, 579	1, 137, 529	1, 443, 215	2, 228, 125
Stems and trimmings.....	750, 512	804, 369	1, 196, 246	866, 281	775, 970	95, 693	77, 955	117, 126	103, 639	92, 005
Manufactures of—										
Cigars.....	105, 917	141, 537	149, 469	174, 246	169, 484	3, 407, 747	4, 375, 657	4, 473, 123	5, 349, 626	5, 077, 976
Cigarettes.....	12, 254	11, 260	11, 903	11, 544	11, 297	29, 159	29, 452	24, 757	33, 521	32, 089
All other articles.....								5, 036	3, 420	3, 590
Articles the growth, produce, and manufacture of the United States, returned.....						238, 213	251, 152	248, 023	312, 804	327, 114
Total.....						25, 885, 776	26, 391, 338	32, 095, 788	34, 764, 007	42, 873, 401
Shipments of foreign merchandise from Porto Rico to the United States.....						5, 485	2, 974	109	1, 402	
Grand total.....						25, 891, 261	26, 394, 312	32, 095, 897	34, 765, 409	42, 873, 401

¹ Included in "All other green, ripe, or dried fruits" prior to July 1, 1910.

² Included in "All other prepared or preserved fruits" prior to July 1, 1910.

PHILIPPINE ISLANDS.

CHRONOLOGICAL SUMMARY.—1521, discovered by Magellan; 1896, insurrection against Spain; 1898, battle of Manila Bay; 1898, transferred to possession of United States by treaty of Paris, in December; 1902, civil government established.

GENERAL PHYSICAL CHARACTERISTICS.

The Philippine Archipelago numbers approximately 3,141 islands and islets, of which 2,775 contain less than 1 square mile. It lies about 500 miles southeast of Asia between $4^{\circ} 40'$ and $21^{\circ} 10'$ north latitude and between $116^{\circ} 40'$ and $126^{\circ} 34'$ east longitude. It is therefore entirely within the Tropics. In their entirety, the islands cover 832,968 square miles of land and water, or more than one-fourth the area of the United States. The islands of notable size are: Luzon, 40,969 square miles; Mindanao, 36,292; Samar, 5,031; Negros, 4,881; Panay, 4,611; Palawan, 4,027; Mindoro, 3,851; Leyte, 2,722; Cebu, 1,762; Bohol, 1,441; Masbate, 1,236. The actual land area of the islands is about 115,026 square miles, and the above-named 11 islands include about 92 per cent of the total.

The islands are mainly of volcanic origin. In his book on the Philippine Islands, Mr. John Foreman gives the following description of their general physical character:

All the islands are mountainous in the interior, the highest elevation, Mount Halcon, in Mindoro, rising to 8,868 feet above sea level. Mount Apo, in Mindanao, reaches 8,804 feet, and Mount Mayon, in Luzon, 8,283 feet. Most of these mountains and subordinate ranges are thickly covered with forest and light undergrowth, while the stately trees are gaily festooned with clustering creepers and flowering parasites of the most brilliant hues. The Mayon, an active volcano, is comparatively bare, and the Apo, although no longer in eruption, exhibits abundant traces of volcanic action in acres of lava and blackened scoriæ. Between the numberless ranges are luxuriant plains glowing in all the splendor of tropical vegetation. There are numerous rivers, few of which are navigable for seagoing ships. The southwest monsoon brings rain to most of the islands, and the wet season lasts nominally six months, from about the middle of April. The other half of the year is the dry season. On the Pacific coast, these conditions are reversed. The temperature throughout the year varies but slightly, the average heat in Luzon Island being about $81\frac{1}{2}^{\circ}$. The climate is a continual summer, which maintains a rich verdure throughout the year, and during 9 months of the 12 alternate heat and moisture stimulates the soil to the spontaneous production of every form of vegetable life. The whole of the archipelago is periodically disturbed by hurricanes which cause great devastation. Earthquakes are also frequent.

The census report of 1903 contains descriptive matter that may be summarized thus: Temperature, as indicated by the thermometer at sea level, is practically the same throughout the Archipelago, but the topographical features of the different islands, and the longitudinal direction of mountains and hills with reference to prevailing winds, have marked effect on the amount of rainfall as well as on the duration of the rainy season. The range is from 36 inches to 160 inches a year, according to locality. The entire Archipelago is mountainous or hilly. In the islands of Luzon, Negros, and Mindanao are broad plains and level valleys, but there is comparatively little level land. Tropical vegetation extends high up on the slopes and covers the lesser mountains and hills. There are 50 or more mountains reported

as exceeding 5,000 feet in altitude. There are 12 volcanoes that have been in eruption within historic times and scores that are extinct or quiescent. Most of the surface of the islands is floored with volcanic rocks or ash.

POPULATION.

The last census taken was in 1903, but it is probable that no very material change has occurred since that time. The total population was then given as 7,635,426. Of this number, 6,987,686 are classed as civilized or partly so, while 647,740 are "wild and uncivilized, although not without some knowledge of the domestic arts." The total is about equally divided between male and female, and the records show 6,931,548, or fully 90 per cent, as born in the islands. Of the foreign born, at that time, the Chinese were in greatest number, with 41,035. The figures have doubtless changed somewhat, but the condition probably remains as it was then.

For purposes of the census, the inhabitants were divided into 24 tribes, although the division was necessarily somewhat arbitrary. Of these groups, 16 were classed as "wild" and 8 as "civilized." As shown above, the former represent only about 9 per cent of the total. The civilized people, with the exception of those of foreign birth, are practically all adherents of the Roman Catholic Church, while of people classed as "wild" probably two-fifths are Mohammedans and three-fifths in varying stages of barbarism.

The population of the larger and more important islands is given as follows: Luzon, 3,798,507; Panay, 743,646; Cebu, 592,247; Mindanao, 499,634; Negros, 460,776; Leyte, 357,641; Bohol, 243,148; Samar, 222,690.

The Visayans of the middle division of the archipelago represent about 42.6 per cent of the total population; the Tagalogs, of Luzon, about 19.3 per cent; and the Ilocanos, also of Luzon, about 10.6 per cent.

OCCUPATIONS.

The occupations of the Filipino people are few in number and present little variety. There is little cooperative work, very little use of machines, and little specialization of functions. A majority of the males farm on a small scale, and many of those living near the coast, as great numbers of them do, alternate farming with fishing. There are, nevertheless, in a population so large, many lines of occupation. The farmers and farm laborers numbered, in 1903, 1,236,327. The spinners and weavers, nearly all of whom are women and girls doing their work with crude appliances in their own homes, were reported as 569,906. The next in order of numbers were day laborers of whom there were 384,000. Merchants are given as numbering 137,311, and fishermen, many of whom were probably farmers for a part of the time, are given as 116,779. There were 66,909 launderers, 65,285 seamstresses, and 54,523 servants. Other occupations are reported thus: Carpenters, 38,230; cooks, 28,747; sailors, 23,027; mat makers, 22,272; distillers, 15,379; coachmen, 14,610; tailors, 14,201; hat makers, 12,979; cigar makers, 11,036; bag makers, 11,036; boatmen, 8,864; potters, 6,125; blacksmiths, 5,185; shoemakers, 4,445; bakers, 3,026; ropemakers, 1,698; butchers, 1,315, and so on through a considerable list numbering those engaged in gainful occupations by tens or scores, by hundreds or by a few thousands.

RESOURCES AND INDUSTRIES.**AGRICULTURE.**

The producing industries and the natural resources of the islands are overwhelmingly agricultural. The leading commercial products, as shown by the export record for the fiscal year 1912, are, in order, copra, manila hemp, sugar, and tobacco.

MANILA HEMP.

The substance known as manila hemp is a product of a species of the plantain family, botanically known as *Musa textilis*, and locally known as abaca. It bears a strong resemblance to the banana plant, which is of the same family. The peculiarity of the *Musa textilis* is that it is found in its wild state only in the Philippines and either failure or an indifferent success has attended efforts to produce it elsewhere. It is, in effect, a Philippine monopoly. It yields a fiber of superior quality for the manufacture of cordage and has been known and used for that purpose for many years. Exports of about 8,500 tons were reported as far back as 1840, and exports of about 40,000 tons were reported in 1872. The fiber is still produced and prepared by crude and wasteful methods. In time, it will doubtless be cultivated extensively and scientifically and treated by machinery suited to the purpose. For many uses, it finds an active competitor in the sisal of Yucatan and elsewhere, and in recent years has been subject to a considerable price fluctuation. If its production and its preparation for the market can be reduced to a strictly commercial and mechanically scientific process, there would be practically no limit to its use and profitable growth. Approximately half of the present output comes to this country and the greater part of the remainder goes to the United Kingdom. Thus, out of total exports of 482,677 tons in the fiscal years 1910, 1911, and 1912, 231,705 tons came to the United States and 198,127 tons went to the United Kingdom. The rest was divided among a dozen or fifteen other markets.

The fiber is widely used in the islands for the production of fabrics for clothing and other purposes, some of which are remarkably fine and beautiful.

COPRA.

Copra is the dried meat of the coconut. Its value is in an oil extracted from it and used for a number of purposes, as a lubricant, in the manufacture of soap, for cooking and medicinal purposes, and for highly valuable dietetic compounds. The demand for the substance is constantly increasing and the industry can be greatly extended with no danger whatever of oversupply. The island people use large quantities of the oil as an illuminant, extracting it by crude methods, but it is a commercial product of leading importance in the industries of the islands. It is an industry in which capital can be invested with large promises if not with entire assurance of excellent returns. The trees grow well throughout the Archipelago and the conditions for most promising results are well known. France is at present the best market for this Philippine product, but there is an appreciable gain in the American demand.

France took nearly 62 per cent of a total shipment of more than 880,000,000 pounds in the fiscal years 1910, 1911, and 1912. Ship-

ments to the United States have increased from 6,542,926 pounds, valued at \$228,565, for the fiscal year 1908, to 53,263,200 pounds, valued at \$2,339,144, for the fiscal year 1912. It is probable that ere long the islands will be equipped with oil mills and that the oil will be shipped instead of the copra. Total shipments in 1908 were 168,473,500 pounds, and the total for 1912 was 373,332,500 pounds.

SUGAR.

The sugar situation has been appreciably affected by the tariff law of 1909 by which sugar, to a quantity not exceeding 300,000 tons a year, is admitted to the United States free of duty. For a number of years prior to the American occupation, sugar ranked second to hemp in the exports of the Philippines. In 1895, shipments exceeded 300,000 long tons. Coincident with the occupation the industry declined and shipments in 1902 were about 100,000 tons, the greater part going to China and Japan. The opening of the market of this country to even a limited quantity free of duty gave the business new life. Some sugar still goes to China, Hongkong, and Japan, but the greater part now comes here. American takings of raw sugar for the fiscal year 1908 amounted to 109,081,787 pounds, and in the year 1912 to 356,666,204 pounds.

Sugar cane is supposed to have been introduced in the Philippines many years ago by Chinese immigrants from Formosa, although there seems reason for belief that at least one variety was brought from Batavia. The greater part of the present supply is produced on the Visayan Islands, the middle islands of the Archipelago. In the last few years plantings have been widely extended and facilities for production and distribution materially improved. While there is no question that, as a mere physical possibility, the sugar output of the islands can be very greatly expanded, there are also forces that make most improbable and almost impossible any very rapid extension in the immediate future. Large capital is needed, the labor supply is quite insufficient, and laws prohibit the acquisition of plantations beyond a fixed area. In a special report submitted in 1908 Mr. Taft, then Secretary of War, said:

There is a good deal of land available for sugar in the Philippines, but there is very little of it as good as that of Cuba, and the amount of capital involved in developing it is so great that I think the possibility of the extension of the sugar production is quite remote. The moment it expands, the price of labor, which has already increased 50 to 75 per cent, will have another increase. All that can really be expected is that the sugar industry shall be restored to its former prosperity in the earlier Spanish times. The question of labor and capital both must always seriously hamper the growth of sugar production.

One direct influence of the operation of the new tariff arrangement appears in the importation of sugar machinery. In 1908 such imports were included under the head of "All other machinery"; in 1910 they were valued at \$4,205; in 1911 at \$507,902; and in 1912 at \$361,013. The sum seems large, but it would require many times that to increase appreciably the Philippine sugar output. Compared with the Cuban mills and the mills of Hawaii, the Philippine plants are small, but they are large enough for present purposes and will serve to increase the sugar output in quantity and, what is much more important, in quality.

TOBACCO.

As in the case of sugar, the tobacco industry has been greatly stimulated by the tariff of 1909. The bill permitted the entrance, free of duty, to the United States of not more than 150,000,000 cigars a year; of wrapper and filler tobacco when mixed with more than 15 per cent of wrapper tobacco, to the extent of 300,000 pounds; and of filler tobacco to the extent of 1,000,000 pounds. It seems probable that the Philippine cigar business in this country has not yet "found itself." The record of exports to the United States before and after the passage of the bill stands thus: There were sent to this country in the fiscal year 1908, 1,365,000 cigars, valued at \$21,781; in 1909, 2,696,000, valued at \$43,818; in 1910, 83,931,000, valued at \$1,906,447; in 1911, 22,974,000, valued at \$625,244; and in 1912, 67,692,000, valued at \$1,520,754. The decline in 1911 is officially attributed to "the reaction of an overstocked market that followed free trade." Shipments of unmanufactured tobacco to the United States are inconsiderable and do not appear to have been affected by the new arrangement. Spain is the notable market for Philippine leaf, and takes about two-thirds of the exports. Besides the United States, the important markets for Philippine cigars are China, Hongkong, Australasia, and the British East Indies.

The plant is said to have been originally introduced into the Philippines from Mexico by Spanish missionaries in the latter part of the sixteenth century, shortly after the establishment of Spanish sovereignty. The best grades are grown in northern Luzon, in the valley of the Cagayan River. Considerable quantities are produced in other Luzon Provinces and some is grown in the Visayan and other islands. The product outside of that of Luzon is generally of an inferior quality. While there are in the Cagayan district hundreds of square miles on which tobacco can be grown, conditions of labor and capital and other influences practically prohibit any extension of the industry that would affect even perceptibly the industry in the United States.

COFFEE.

A quarter of a century ago coffee was an important product of the islands, both for domestic consumption and for export. About 1890 the coffee plantations were devastated by insects and disease, and the industry was practically abandoned. The principal center of production was in the island of Luzon southward from the city of Manila. The product was high in grade, comparing favorably with the Java berry. The general conditions of soil and climate are excellent, and it seems probable, if not certain, that experiments with different varieties will some day result in the discovery of a plant that can be grown successfully and profitably. The process will doubtless be somewhat delayed inasmuch as a fair test would require not less than 10 years. Several years are required for the plant to come into bearing, and additional years would be required to determine results. Meanwhile, coffee is an article of importation.

RICE.

The statement is made in the census report of 1903 that rice "is the principal article of food of nearly the entire native population,

and is cultivated more or less extensively in all Provinces." In earlier years large quantities were exported. It is now imported in hundreds of millions of pounds annually. The enormous increase in imports since 1898 is officially attributed to the lack of carabao (the work animal of the islands), which have been slain by thousands by the rinderpest, to devastation of the growing crops by locusts, by the disturbances caused by military operations, and by the ravages of cholera epidemics. It is presumable that intelligent and systematic methods of cultivation will some day restore the industry to the point, at least, of production of the local requirement. More than 80 per cent of the present imports, valued at \$10,569,949 in 1912, comes from the French East Indies, with considerable purchases from the British East Indies and Siam.

VARIOUS FRUITS, VEGETABLES, ETC.

The range of latitude and of altitude in the Philippine Islands makes possible the successful production of an almost unlimited variety of fruits and vegetables. During their experience the Spaniards introduced many plants not native in the islands, and demonstrated at least the physical possibility of their production. These, with the native plants, form a list too long and of too little commercial importance for inclusion here. A selection of some of the more interesting, commercially, includes the following, the descriptions being taken from the census report:

The cultivation of the cacao plant (the source of chocolate) is carried on to some extent in various portions of the Philippines, and in spite of crude and wasteful methods has proved a highly profitable and promising branch of agriculture. No appreciable commercial surplus has yet been produced.

The production of indigo has been a source of considerable income and has contributed appreciable amounts to the sum total of insular exports.

Cotton of long-staple variety was formerly grown quite extensively in some of the Provinces, but its cultivation was discouraged by the Government (Spanish) in order to encourage the growing of tobacco. The industry still exists, however, on a greatly reduced scale, and will probably hereafter increase.

Pineapples are cultivated less for their fruit than for their fiber, which is used for the manufacture of fabrics of remarkable delicacy and beauty.

Ordinary garden vegetables are cultivated in the Philippines to a very limited extent. There are gardens near Manila and other centers of population, managed principally by Chinese, but the natives scarcely ever engage in their culture. That nearly all vegetables grown in the United States can be produced in the islands has been demonstrated, and their production will undoubtedly increase as time passes and the wealth and population increase. Among those cultivated are Irish potatoes, onions, garlic, asparagus, radishes, cabbage, artichokes, endives, peppers, tomatoes, carrots, celery, parsley, squashes, melons of different kinds, cucumbers, and a few native vegetables that are prized on account of their flavors and food value.

Bananas are the commonest and cheapest fruit in the Philippines, there being a large number of species, varying greatly in form and taste. More than 50 varieties have been enumerated and described.

Citron, the fruit of which is very large, is found in abundance. Seven varieties of lemons, some of superior quality, are grown. The mango, one of the most exquisite fruits in the world, is found in its highest excellence in the Philippines. Oranges of various indigenous species are found.

GENERAL AGRICULTURAL CONDITIONS.

While agriculture is the principal industry of the Filipinos, the methods employed are extremely crude and primitive. The economic waste is enormous. Here and there, since the occupation, there have been instances of improvement in individual cases, but they are decidedly infrequent. The evidence of this appears in the imports of agricultural implements. There are more than 1,200,000 people in the islands classed as farmers or farm laborers, yet the imports of farms implements and tools for the last four years have averaged only \$60,000 a year. The transformation of the Philippines into the rich and profitable garden which they well might be will come as an evolutionary process, probably slow but, in the end, certain. The possibilities are there, and in time they will be developed.

After a careful study of agricultural conditions in the Orient, and more particularly in the Philippines, an agent of the Department of Agriculture submitted, some months ago, a general report, from which the following extracts are taken:

Notwithstanding their great natural riches, the agriculture of the islands can not be called prosperous, and on the whole it is crude. Of the 60,000,000 acres of land in the Archipelago, at least two-thirds is arable, but only about 3,000,000 acres is in cultivation. Owing to the crudeness of the sugar mills only about one-half of the juice is obtained from the cane. Furthermore (because of the inefficiency of the mills), the cane grown is of a very small variety. Of copra, or dried coconut, the Philippines produce one-third of the world's supply, but owing largely to careless preparation it commands the lowest price of any. The industry is capable of enormous extension. The tobacco of the islands is of peculiar flavor, for which one must acquire a taste. The growing and curing of the crop is very crude, due largely to the short-sighted, grasping policy of the tobacco companies, which does not encourage the native planters to do better. Manila hemp is a crop of which the Philippines possess a monopoly, and for certain purposes no satisfactory substitute has been found. Wherever a substitute can be used, as in binding twine, manila hemp is fast losing the market, especially to sisal hemp. Of rice there is little to be said, except that the Philippines do not produce enough for their own consumption, whereas they should produce a great surplus for export.

EFFORTS TO IMPROVE AGRICULTURE.

The following statement is taken from a pamphlet published in 1904 by the Bureau of Insular Affairs. The work outlined by it has been since carried on with eminent success:

The inhabitants of the Philippine Islands are essentially an agricultural people. Agriculture had, nevertheless, up to the time of American occupation, been carried on in a very primitive fashion, with rude implements and antiquated machinery, and without the employment of suitable methods of cultivation. The results obtained, even under such conditions, afforded proof of the favorable character of the climate and the natural richness of the soil.

The insular government has created a bureau of agriculture to conduct investigations and disseminate useful information with reference to the agricultural resources of the Philippine Islands, the methods of cultivation at present in vogue and their improvement, the practicability of introducing new and valuable agricultural products, the introduction of new domesticated animals, and the improvement of the breeds of domesticated animals now in the islands, and, in general, to promote the development of the agricultural resources of the country.

It has been shown that many vegetables peculiar to the United States and the Temperate Zone can be cultivated to advantage in the Philippine Islands. Irish potatoes, peas, tomatoes, beets, and other vegetables have been successfully reproduced in the Philippines from American seed, as well as improved varieties of the orange and lemon brought from California. Pear, peach, apricot, and plum trees have been successfully introduced in the highlands.

An experimental station for the testing of seeds and the growing of plants and trees not indigenous has been established in Manila, where it can be conducted under the immediate direction of the officials of the bureau, and, where the results here obtained justify, the work is carried on in other parts of the Archipelago where soil investigations have demonstrated a possible successful result.

In the past the vegetables sold in Manila were chiefly imported from China and were a continual source of danger on account of the possible introduction of disease, and for this reason the successful introduction and cultivation of vegetables will have a most far-reaching effect.

The bureau of agriculture has demonstrated that forage for animals can be successfully grown in the Philippines, whereas in the past it has been necessary to import the same at a high price.

It was demonstrated under insular government auspices that on well-fertilized land with frequent irrigation 10 crops of teosinte can be grown in one year with a yield of 135 tons green and 30 tons dry fodder per acre. A field of alfalfa sown on January 6 was cut three times before August 31, the last cut yielding at the rate of 2 tons green and 1,300 pounds dry per acre.

FOREST RESOURCES.

It is officially estimated that the forests of the Philippine Islands contain more than 2,500 tree species, of which probably 300 find their way into the Manila and provincial markets in the form of timber, although probably less than 100 are commonly encountered.

Director Ahern, of the forestry bureau of the Philippine Islands, states, in his report dated June 30, 1911:

The public forests under the charge of this bureau cover 16,000,000 hectares (40,000,000 acres) of land, mostly rough, with few and poor trails, and difficult to traverse. They are scattered from one end of the archipelago to the other. The stand of merchantable timber is estimated at 200 billion board feet. The value of the forest products realized annually is \$2,500,000, which, by proper development and encouraged by this bureau, could be increased to \$30,000,000 per annum, with an enormous benefit to all Philippine industries.

In addition to this some forest land is in private ownership, but the total area of such is comparatively small. In 1900, the Philippine Commission reported that "the timber of the Philippine Archipelago forms one of its most important sources of wealth." While this statement was made in general terms and lacked a scientific basis, expert investigation has given it a full indorsement. There is a great supply of forest woods of many kinds, useful for an infinity of purposes, from fine cabinet woods to rough construction timber. The names of most of them are local and unfamiliar to the American people. Occasional reference is made by the uninformed to mahogany, but the genuine mahogany is not a product of the islands. There are, however, substitutes for it, like the narra, for instance, and perhaps in no way inferior as a cabinet wood. Teak is not indigenous but has been planted and grown successfully in the southern islands. Molave, perhaps the best known hardwood in the Philippines, is of the teak family.

In some sections pine is obtained or can be obtained in considerable quantity. While it is estimated that the forests could be made to yield 2,000,000,000 board feet of merchantable timber annually without damage to the remaining trees, the present output does not equal the demand and lumber in considerable quantity is imported

from the United States. At present the industry encounters serious difficulties. The forest areas present, usually, a rough surface, heavily overgrown with vines, shrubs, small trees and forest plants; they lie at considerable distances from harbors or railway lines; and labor is not readily obtainable. For operations on any large scale, a heavy investment would be needed, backed by expert knowledge of lumbering in rough country. In time, the difficulties will be met and conquered and the islands will become an important source of supply of highly valuable cabinet woods. The coarser woods will find an ample market in the islands themselves and the finer kinds will go to markets that can and will pay high prices for choice material. At present, the timber is growing faster than the cut, and the removal of many of the trees now ready for the axe and the saw would clear the ground for a new growth.

RUBBER.

While much has been said of the possibilities of rubber production, the commodity can not yet be regarded as a commercial product. Plants and trees yielding rubber or gutta-percha are native in some of the southern islands, particularly Mindanao and Tawi-Tawi, but the processes of extraction thus far have been exceedingly crude and wasteful. There seems no reason for belief that the industry, except through tree cultivation, will ever attain any appreciable proportions. As a developed industry, the signs are highly encouraging and several concerns are already engaged in planting the Para variety. It is officially reported that "it has already been demonstrated beyond doubt that the soil and climate of the Philippines are favorable to the growth of standard cultivated trees."

OTHER FOREST PRODUCTS.

The bamboo is a plant of almost endless native use. It makes, for many of the native people, the houses in which they live, an important part of their clothing, and a wide variety of articles of farm and household use. Its fibers are made into hats for an export trade amounting to several hundred thousand dollars a year.

The forests also yield gums, resins, and oils that enter into export trade, and the business is susceptible of large increase through scientific methods of production and collection. Gum copal is exported to a value of \$50,000 or more a year, the amount being affected by both quantity and prevailing market price. Ilang-ilang oil is shipped to about the same amount, the value being subject to the same influences. In his report for 1911, the director of forestry (of the Philippine government) said:

The demand for Philippine lumber has always exceeded the amount manufactured, but at present the disproportion is probably greater than ever before. There is, of course, no question about the amount of standing timber available for exploitation, timber of such kinds and so situated that it can be logged with a substantial profit. Only a small fraction of the commercial forests of the islands has been touched.

The local demand alone is in excess of the amount of lumber manufactured, and timber users find it difficult to fill their needs even at the prevailing high prices. The shipment of Philippine lumber to the United States, although small at present, could be made at once to assume large proportions if the capacity of the local mills were increased to provide a sufficient surplus over local demands. China presents an almost inexhaustible field for the cheaper grades of lumber not suitable for export to the United States or Europe. The one thing needful is capital.

MINING.

That many metals and minerals are found throughout the Archipelago is well known, but the commercial value of the deposits, and perhaps the commercial value of any of them, remains for determination. The list of known substances includes coal, gold, copper, iron, lead, manganese, sulphur, marble, lime, and others, while reports are received of the location of still others.

COAL.

Coal was discovered on the island of Cebu in 1827, and has been mined on a small scale for local consumption for 50 years or more. In 1904 development work was begun by the military authorities on the island of Batan, a small island near the southeastern extremity of Luzon. The product is classed as subbituminous, and while not of high grade is held to equal the deposits of Japan and Australia as a steam-making coal. While the Batan deposit has thus far been given more attention than the others, deposits of similar quality have been located in the islands of Mindoro, Masbate, Cebu, and Mindanao. The output value of the Batan mines in 1909 and 1910 exceeded \$1,500,000 a year.

The coal-mining industry is now regarded as having passed the experimental stage, at least as far as the Batan deposit is concerned. The local demand is increasing and the importance of developing all of the promising mines is obvious. The local market requires about 400,000 tons a year at present and a large part is imported from Japan and Australia. An obstacle appears in the geologic structure of the islands. The coal strata are usually folded or faulted as a result of earthquakes and landslides, and the roofs of the seams are rarely firm enough to stand without timbering. It is believed that in most cases the difficulties can be overcome and the industry made profitable.

GOLD AND SILVER.

In his book on the Philippine Islands Mr. John Foreman says: "From the earliest period of the Spanish occupation of these islands (1521) attention has been given to gold seeking. It is recorded that in the year 1572 Capt. Juan Salcedo went to inspect the mines of Paracale, in the Province of Camarines, and in the same district the village of Mambulao has long enjoyed fame for the gold washings of its vicinity."

The presence of gold, both in lode and in placer, in many places is well known. Since the American occupation hundreds of soldiers, their term of enlistment having expired, have wandered through the islands seeking the source of the gold seen in the possession of the natives. There are numerous streams from which the people of their vicinity obtain, by crude methods and little time or work, a quantity of gold sufficient to provide them with all they want in food or clothing. This means of livelihood has been the practice of many people for many years. Mr. Foreman says, in his book: "Gold probably exists in all the largest islands of the Archipelago, but in a dispersed form; for the fact is that after centuries of search large pockets of it have never been traced to defined localities, and, so far

as discoveries up to the present time demonstrate, this colony can not be considered rich in auriferous deposits." It is probable that since the American occupation the search for gold has been more persistent, more scientific, and more successful than ever before in the history of the islands, yet no deposits of marked importance have been discovered. The total value of the gold obtained is reported for 1908 as \$434,500, for 1909 as \$495,194, and for 1910 as \$308,860. Extensive deposits are not impossible, but they may be regarded as somewhat improbable. Mining or washing on a small scale promises to be profitable in many places.

Silver occurs in small quantities in connection with gold in some localities.

COPPER, IRON, AND OTHER SUBSTANCES.

Copper in small quantity is found in a number of islands—Luzon, Mindoro, Marinduque, Masbate, Samar, Sulu, and others. It is converted into metal, by crude processes, by the natives for their own uses and purposes. Thus far it has not appeared in quantity sufficient to warrant the erection of smelters, nor in quantity of a quality that would warrant shipment of the ore.

Iron ore of good and even of excellent quality is found in different parts of the islands, and a fair supply might be secured if a suitable coke could be conveniently and economically obtained. It occurs chiefly in the form of hematite and magnetite.

Sulphur is found in many places. Lime is found in ample supply. Marble is obtainable at a short distance from Manila and it has been at times quarried for use in that city. Granite is not found, and most of the stone available is too soft for building purposes. Mineral oil has been located, but the supply is uncertain as yet. It seems probable that much of the reported mineral wealth of the islands exists mainly in the imaginings of the inexperienced. The wealth of the country is doubtless rather in what will grow out of the soil than in what lies under the surface.

FISHERIES.

A large percentage of the Filipino people live on the shore, or within a comparatively short distance of it, and fish is among the chief articles of food. The census of 1903 states that "fish forms one of the principal items of food of the Filipino people, and a large proportion of the people are fishermen; that is to say, they devote a portion of their time to catching fish, sharing that occupation with farming or other employments." There has been no change in the general condition since that was written. In addition to the local catch, fish and fish products are imported to a value of about \$600,000 a year.

About 500 species of fish have been found and classified. Most of them are quite unknown in this country, but among the more abundant kinds are mullet, mackerel, herring, anchovies, groupers, snappers, tarpon, pompano, and bonito. The census of 1903 (the latest taken) states that the annual consumption of fish in the islands approximates 500,000 long tons. It was estimated that there were at that time employed in fishing some 119,000 persons and 28,000 boats.

Pearl oysters are abundant in the waters of the southern islands, and pearl fishing is an important industry. The apparatus used is, in much the greater part, a collection of crude native devices, although modern equipment for diving is employed to a limited extent. Mother-of-pearl and other shells, including tortoise, are sources of revenue to an important amount. (See table of exports.) Shrimps, lobsters, and crabs are also taken in abundance. Sharks are caught for the tail and fins, for which there is a ready market in China.

MANUFACTURES.

As the last census was taken in 1903 and many changes have occurred since that time, it is not possible to give in detail the present situation. The production of sugar cane is an agricultural industry, but the conversion of the expressed juice of the cane is classed as manufacturing. It is probable that at least 50,000 persons are employed in sugar mills, large and small, and it is certain that this number will, in the next few years, be materially increased by the extension of present mill facilities and the installation of new mills. The extension of the industry follows the special provision of the United States tariff of 1909.

Another important factory industry is the manufacture of cigars and cigarettes for local consumption and for export. In these lines many women are employed, and the industry as a whole gives employment to something like 20,000 people.

While not strictly a manufacturing industry, the production of hemp is a mechanical process in which many persons are engaged. Following that process is an industry of large importance and others less important. The hemp fiber is the basis of a very extensive household industry.

The census report (1903) states: "Cloth making, the principal household industry of the Philippines, antedates history, the natives having been engaged in the production of textiles when the islands were discovered by Magellan. The three principal varieties of cloth are sinamay, jusi, and piña. The first, which is used for wearing apparel by both males and females, is woven from selected hemp fibers in bright, contrasting colors." Jusi is a variety of cloth in which the fibers of hemp and of pineapple are combined. The true piña is made from pineapple fiber only, though material sold as piña cloth often contains some fine hemp fiber. The rude loom, operated by women and girls, is a part of the domestic equipment of thousands of Filipino homes, and the total output must be very large.

Another domestic industry is the manufacture of hats from a number of fibers, such as hemp and bamboo, and from grasses. A large export trade in hats is being developed, the exports for the calendar years 1909, 1910, and 1911 having been, respectively, \$239,000, \$279,000, and \$440,000. A great many articles of domestic use and convenience, such as mats, rugs, bags, and garments are made from fibers of hemp, coconut, and a number of other plants. These domestic products, which to an appreciable extent enter into local trade, operate to limit materially the importation of textile fabrics of many kinds. In time they will doubtless be crowded out by shop and machine made articles, some imported and some locally produced.

MANUFACTURES FOR LOCAL CONSUMPTION.

There is an export business in only a few lines of manufacture. The leaders are sugar, cigars and cigarettes, native cloths, cordage, and hats. Among the products of local establishments for local use and consumption are bakery products, distilled and malt liquors, clothing, boots and shoes, soap, lumber, carriages and wagons, mineral and soda waters, candles, confectionery, furniture, leather, foundry and machine-shop products, bricks and tiles, trunks, pottery and terra cotta, ice, and ships and boats. There are the usual trades, blacksmithing, tinsmithing, carpentry, etc.

The larger number, or the greater part of the mechanical industries are carried on in or near the city of Manila. Throughout the country parts the requirements are supplied largely by what is called the "cottage" or "household" industry. The census report says that the inhabitants of the Philippines, though possessed of considerable aptitude, power of imitation, and, under proper training and influence, giving evidence of much natural ability in mechanical work, are not and never have been largely engaged in manufactures. Their industries, beyond a comparatively limited production and the conversion into commercial forms of certain agricultural commodities, have been confined mostly to the making of such articles as have been necessary to supply their few and primitive wants; and, speaking generally, productive enterprise, aside from such agriculture and its allied mechanical processes as are carried on, has made little headway in the islands. The actual needs and desires of the people are few and easily met.

Under the conditions now existing and that will exist hereafter, with higher social standards due to education and greater social opportunity as a result of expanded industries, many changes have come and still other changes will come. With industrial expansion will come an increase in the conversion of native products into export commodities and an increase in demand for the machine-made articles of other lands.

TRANSPORTATION.

Much of the traffic of the Archipelago is necessarily carried over water routes, and the equipment for the service includes steamers and sailing vessels with a supplementary outfit of native boats. The land system of transportation consists of approximately 1,000 miles of railway, completed or under construction, with a supplementary service of bull carts.

The following comment is taken from the annual report of the Chief of the Bureau of Insular Affairs, for 1907:

When the United States entered the Philippine Islands in May, 1898, there were under operation therein only 120 miles of railroad, extending from Manila northward to Dagupan. There was later constructed, under the authority of the Philippine Commission, enough additional trackage to bring the total up to about 200 miles, all being in the island of Luzon. Under the enabling acts of Congress of July 1, 1902, and February 6, 1905, further concessionary grants were made by the Philippine Commission on May 28 and June 10, 1906, respectively, for 428 additional miles of railroad in Luzon and 295 miles in the islands of Panay, Cebu, and Negros. All of the lines will run through rich country, capable of producing large quantities of hemp, rice, sugar, tobacco, cabinet woods, and minerals.

Reports of the same official, under later dates, show the progress of the new railway system from year to year. Later grants have added somewhat to the originally proposed mileage. When all is completed, the Luzon system will extend from San Fernando, in the Province of Union, north of Lingayen Gulf, to Albay, near the southeastern extremity of the island. This, with its branches, will form a system more than 800 miles in length. In time, a branch from this line, or a connection with it, will cross the mountains and follow the great Cagayan Valley to Aparri, on the north coast.

ROAD CONSTRUCTION.

One of the first acts of the Philippine Commission, in 1900, was an appropriation for roads and bridges. Since that time hundreds of miles of serviceable highways have been constructed. There has been special activity in this department in more recent years. In 1910 the commission reported the total insular or provincial road and bridge funds as \$3,000,000 for the year. It also reported, as follows, the total mileage of first-class roads for the indicated years: 1908, 250; 1909, 345; 1910, 575. The report for 1911 states that there were in operation in that year 1,000 miles of first-class road, 665 miles of second class, and 2,085 miles of third class. In addition to these there are endless mountain trails, many of which will ultimately be supplanted by properly constructed highways. The road system is costly, by reason of the occasional torrential rains, but it is being extended as rapidly and maintained as well as finances will permit. A system of prizes for provincial roads has been inaugurated and is reported as having "aroused a deep and abiding general interest in the road policy."

These roads and the railways constructed and in process of construction open trade channels in which an ever-increasing volume of merchandise flows in both directions, inward and outward.

COMMERCE.

THE ISLAND PEOPLE AS BUYERS.

The imports of the Philippine Islands for 1890 to 1895, as shown by the Spanish reports of commerce, averaged about \$15,000,000 a year. In 1899, the first full year of American occupation, they amounted to \$19,000,000 (for the calendar year). An explanation is here necessary. Two separate and, heretofore, widely differing accounts of the trade of the islands with the United States have been employed. The Bureau of Statistics of the Department of Commerce and Labor has reported the exports from this country to the islands, and the Insular Bureau of the War Department has reported, for the insular government, the imports from this country. The former of these reports included all merchandise except Government supplies carried on Government vessels, while the latter omitted, in addition to such supplies, all merchandise admitted to the islands free of duty for the use of the Government or for use in construction and equipment of railways in the islands, under the act of February 6, 1905. The Insular Bureau now includes such materials in its reports. The following statement, showing the development of the imports of the islands, gives the figures of exports from the United States for the fiscal years 1903 to 1910, both inclusive, as reported by the Bureau

of Statistics. The figures for 1911 and 1912 are the imports as reported from the islands, the material previously omitted being included.

Years.	From United States.	From other countries.	Total.	Years.	From United States.	From other countries.	Total.
1903	\$4,038,909	\$29,027,784	\$33,066,693	1908	\$11,461,732	\$25,838,870	\$37,300,602
1904	4,832,900	28,587,545	33,420,445	1909	11,189,441	23,100,627	34,290,068
1905	6,200,620	25,114,852	31,315,472	1910	16,832,645	26,292,329	43,124,974
1906	5,459,444	21,465,373	26,924,817	1911	19,483,658	30,350,064	49,833,722
1907	8,661,424	23,630,496	32,291,920	1912	20,604,155	33,945,825	54,549,980

Except for the gain in the foreign account in 1912, the increase in the imports of the islands in the last 10 years has been entirely in the account with the United States. The gain in the foreign account for 1912 is attributable to unusually heavy imports of rice to meet famine conditions. With that qualification there has been no increase in purchases in other markets, while there has been a very great gain in the American account.

IMPORTS FROM FOREIGN COUNTRIES.

The movement of imports from countries other than the United States is shown in the following tables, compiled from statistics of the Insular Bureau:

Years.	United Kingdom.	Germany.	France.	Spain.	China.	Hongkong.
1903	\$5,171,733	\$1,998,922	\$1,182,679	\$2,620,596	\$4,454,047	\$757,491
1904	4,127,951	1,600,878	1,179,847	2,008,994	3,144,083	472,902
1905	4,848,393	1,498,898	832,303	1,931,359	2,942,307	207,703
1906	5,224,020	1,360,961	833,858	1,787,310	2,654,214	304,291
1907	6,457,910	1,655,288	851,365	1,756,667	2,760,145	305,503
1908	6,109,588	1,933,808	821,133	1,654,480	2,499,459	463,970
1909	5,408,819	1,731,071	947,064	1,340,101	2,262,037	356,661
1910	5,657,151	1,978,352	1,032,278	1,386,722	2,700,599	505,943
1911	6,290,169	2,360,037	1,213,558	1,409,048	2,170,601	720,580
1912	5,509,773	2,389,233	1,276,638	1,254,359	1,978,315	799,085

Years.	Japan.	British East Indies.	French East Indies.	Australasia.	Other countries.
1903	\$700,728	\$2,234,950	\$7,134,523	\$618,140	\$2,153,975
1904	803,314	2,569,801	9,204,874	1,101,092	2,373,809
1905	1,018,437	2,007,514	5,968,614	1,365,662	2,493,657
1906	657,386	1,515,042	3,854,217	1,523,668	1,750,406
1907	1,009,944	1,626,091	3,474,236	1,612,138	2,121,209
1908	1,111,863	1,238,998	5,746,432	2,046,136	2,213,003
1909	1,441,063	745,057	4,275,398	2,498,949	2,094,407
1910	2,241,747	971,177	5,454,674	2,305,177	2,058,509
1911	2,474,605	1,094,465	7,415,881	2,720,324	2,480,796
1912	3,234,714	1,950,743	9,575,741	3,126,275	2,850,919

Theoretically, the Filipino people should supply all of their requirements in foodstuffs and have a considerable surplus for export, but they imported in 1912 about \$2,000,000 worth of breadstuffs, more than \$10,000,000 worth of rice, more than \$300,000 worth of cocoa, \$400,000 worth of coffee, \$360,000 worth of eggs, \$3,540,000 worth of meat products, \$687,000 worth of fish, \$420,000 worth of fruit and nuts, \$350,000 worth of sugar and molasses, \$75,000 worth of tea, and more than \$800,000 worth of vegetables. The total imports of foodstuffs amounted to about \$20,000,000, or about 37 per cent of the total over-sea purchases. Imports of textile fabrics and articles

of personal wear were valued in 1912 at more than \$11,000,000, divided thus: Cotton goods, \$9,350,000; woolen goods, \$325,000; silk goods, \$845,000; boots and shoes, \$587,000; hats and caps, \$185,000. Imports of iron and steel and manufactures thereof exceeded \$6,000,000 in value.

SOME OF THE IMPORTANT PURCHASES.

In a pamphlet in which brevity is one of the definite purposes it is not possible to report the trade of the islands in full detail. It is published in full by the Bureau of Insular Affairs, and information is there available for those who desire it. Attention may here be called to some of the more important purchases, their value, and, in part, the country of origin. Some of the imports from the United States are included in the following list, but the purchases from this country are reported more fully in another table.

Articles and countries.	1910	1911	1912
Agricultural implements, and parts of.....	\$50,067	\$59,883	\$69,097
United States.....	24,978	39,440	20,043
United Kingdom.....	11,518	15,504	47,172
Animals, including horses, etc.....	935,837	1,564,223	989,743
Cattle and carabao.....	871,966	1,490,500	926,823
China.....	499,151	36,115	-----
French East Indies.....	340,557	1,391,115	688,916
Australasia.....	16,612	43,358	189,120
Brass, and manufactures of.....	181,212	231,040	235,988
United States.....	71,771	113,973	121,254
United Kingdom.....	23,159	31,109	22,602
Germany.....	51,514	48,859	57,990
Cars, carriages, etc.....	351,590	1,180,605	1,183,091
Automobiles ¹	-----	567,177	535,309
United States.....	-----	427,622	423,624
France.....	-----	122,937	99,591
Parts of automobiles ¹	-----	142,597	178,397
United States.....	-----	107,660	112,546
France.....	-----	25,836	61,611
Cycles, and parts of.....	45,163	97,995	174,386
United States.....	31,028	77,509	136,694
United Kingdom.....	7,981	9,094	25,544
Cement.....	416,815	598,671	539,749
United States.....	103,078	91,979	468
French East Indies.....	59,411	117,761	118,403
Hongkong.....	211,248	352,177	329,609
Coal and coke.....	979,910	1,561,769	1,146,504
Coal.....	972,341	1,548,437	1,131,998
Japan.....	411,557	651,796	794,303
Australasia.....	473,773	572,165	326,066
United States.....	-----	251,043	392
Cocoa, or cacao.....	220,750	261,935	323,417
British East Indies.....	201,360	215,005	147,290
Dutch East Indies.....	6,341	26,980	154,003
Coffee.....	279,494	255,039	404,534
United States.....	86,299	-----	-----
Hawaii.....	22,716	71,358	74,551
Porto Rico.....	270	119,690	162,392
Turkey in Asia.....	140,145	56,905	124,305
Cotton, and manufactures of.....	8,522,307	10,395,480	9,344,945
Diamonds and precious stones ¹	-----	378,648	367,006
France.....	-----	315,815	328,195
Eggs.....	280,806	316,741	363,536
China.....	280,787	316,478	363,526
Iron and steel, and manufactures of.....	3,305,701	5,887,185	6,031,603
Leather, and manufactures of.....	760,463	994,191	1,025,807
Meat and dairy products.....	2,377,466	2,900,028	3,541,274
Oils.....	1,501,244	1,478,684	1,880,952
Paper.....	638,828	792,968	758,044
Rice.....	5,321,962	6,560,630	10,569,949
British East Indies.....	168,793	421,615	1,335,936
French East Indies.....	5,050,539	5,899,481	8,726,798
Siam.....	99,451	234,637	501,864
Silk, and manufactures of.....	635,514	767,029	844,563
Soap.....	115,753	195,820	264,109
United States.....	43,749	79,104	135,279
United Kingdom.....	38,016	73,488	99,663
Spirits, wines, and malt liquors.....	555,191	508,798	462,602
Wool, and manufactures of.....	184,697	324,728	324,500

¹ Not stated separately prior to July 1, 1910.

Some of the many lines of merchandise imported by the Filipinos are too varied and complex for presentation in brief tabular form. The following comment is intended to indicate the direction of the trade movement.

BOOKS AND OTHER PRINTED MATTER.

Textbooks come, in large percentage, from the United States. Purchases of such in 1912 amounted to \$167,750, with \$145,000 in the American account. Imports of other books amounted to \$155,700 in 1911 and to \$104,400 in 1912, Spain supplying about \$25,000 in each year. The greater part of the remainder was supplied by the United States. Germany leads in the supply of labels, flaps, bands, wrappers, etc., for tobacco, with \$34,600 out of a total of \$51,000 in 1912. Spain supplies more than half of the general printed matter, such as pamphlets, magazines, and other forms of printed paper, valued at about \$100,000 a year.

BREADSTUFFS AND FEEDSTUFFS.

Australasia competes with the United States for the wheat-flour market, which has an average value of about \$1,600,000 a year. In 1912 it was \$1,761,000, with \$1,044,000 in the American account and \$717,000 in the Australasian. In the last three years imports of oats have been, respectively, \$114,000, \$221,010, and \$286,000, about two-thirds of the trade coming to the United States, the remainder being divided between Canada and Australasia. Australasia and the French East Indies take a large part and the United States a very small part of the trade in bran, middlings, and mill feed, amounting to \$150,000 in 1912. The United Kingdom has a very large share of the imports of bread and biscuit, a business showing \$140,000 in 1912. China first and the British East Indies second control much the greater part of the \$165,000 (1912) business in macaroni, vermicelli, and similar preparations.

CARS, CARRIAGES, ETC.—CHEMICALS, DRUGS, ETC.

With the improvement and extension of the highway system of the islands there should come an increasing demand for automobiles and wagons and perhaps for carriages. The latter will find competition in a local industry of some importance. The new railways make a demand for passenger and freight cars. Out of \$220,000 worth of steam-railway cars purchased in 1911 and 1912 the share of the United States was \$200,000. Out of \$130,000 worth of street-railway cars this country furnished \$29,000 worth, the United Kingdom and Germany supplying the remainder.

The purchases of chemicals, drugs, etc., are considerable, figures for recent years being thus: 1910, \$539,743; 1911, \$642,439; 1912, \$710,279; but many articles are included and the trade is widely scattered in small and comparatively small accounts with many countries. The largest of the individual groups is patent and proprietary medicines,

of which, in the last three years, \$240,000 worth have been brought from the United States, \$35,000 worth from the United Kingdom, \$108,000 worth from France, and \$27,000 worth from Germany. Other articles imported under this head are acids, anhydrous ammonia, baking powder, calcium carbide, dyes and dyestuffs, ginseng, mineral waters, chlorate of potash, quinine, roots, herbs, bark, etc.

The United Kingdom holds much the larger part of the trade in copper sheets, nails, tacks, washers, rivets, etc., and the United States the larger part of the trade in other articles made of copper.

COTTON CLOTH.

In 1912 the United States supplied all of the \$98,000 worth of raw cotton imported. The imports of cloth were not reported in detail prior to 1911. The business of the last two years has been as follows:

Articles and countries.	1911	1912	Articles and countries.	1911	1912
Cotton cloth.....	\$7,128,605	\$5,875,813	Cotton cloth—Continued.		
Unbleached.....	248,506	438,155	Dyed or colored cloth—		
United States.....	174,077	358,514	Continued.		
United Kingdom.....	31,173	34,226	Italy.....	\$53,769	\$46,387
China.....	37,315	37,578	Spain.....	45,900	46,559
Bleached cloth.....	2,363,187	2,271,211	Switzerland.....	136,089	104,247
United States.....	954,927	1,264,243	British East In-		
United Kingdom.....	1,222,199	809,521	dies.....	40,314	23,211
Japan.....	97,429	150,701	Japan.....	216,877	283,407
Switzerland.....	15,396	19,622	Embroidered cloth....	82,676	85,088
China.....	55,875	14,456	Switzerland.....	74,608	79,823
Dyed or colored cloth.	2,582,139	1,591,867	Printed cloth.....	1,852,097	1,489,492
United States.....	1,282,951	480,100	United States.....	1,080,988	1,125,175
United Kingdom.....	716,263	561,537	United Kingdom.....	733,935	328,119
Germany.....	16,627	19,612			

KNIT GOODS—YARN AND THREAD.

There is a business of nearly \$1,000,000 a year in cotton knit goods, stockings and socks, undershirts and drawers, etc., divided as follows:

Articles and countries.	1911	1912	Articles and countries.	1911	1912
Stockings and socks.....	\$99,506	\$119,017	Undershirts and drawers.....	\$873,003	\$797,434
United States.....	23,444	37,410	United States.....	67,890	88,565
Germany.....	45,558	42,988	Germany.....	269,274	173,062
Japan.....	18,659	21,291	Spain.....	371,466	272,627
			Japan.....	151,685	246,069

A business in ready-made clothing, cuffs, collars, shirts, dresses, shirtwaists, etc., amounting to about \$225,000 a year, comes in very large part to the United States. A business in handkerchiefs, amounting to \$187,000 in 1911 and to \$177,000 in 1912, goes chiefly to the United Kingdom. The same country supplies a large part of the piqués, velvets, velveteens, plushes, laces, and tulle. Japan

supplies a large part of the demand for towels. There is a large trade in yarns and thread, thus divided:

Articles and countries.	1911	1912	Articles and countries.	1911	1912
Yarns and thread.....	\$1,209,393	\$1,329,645	Yarns and thread—Con.		
Thread.....	388,426	417,064	Yarn, bleached.....	\$341,200	\$329,741
United States.....	161,477	392,603	United Kingdom..	67,930	91,654
United Kingdom..	206,200	93,564	China.....	49,360	1,287
Yarn mercerized.....	144,131	153,904	British East		
Switzerland.....	74,428	21,058	Indies.....	8,760	27,784
Japan.....	57,095	117,736	Japan.....	202,935	199,905
Yarn, unbleached....	28,427	149,487	Yarn, dyed or colored.	307,209	279,449
Japan.....	26,886	146,069	United Kingdom..	181,158	155,040
			Switzerland.....	55,190	39,756

POTTERY—FIBERS—FISH—FRUITS AND NUTS.

The requirements in earthen, stone, and china ware are met in part from local resources and in part by China, with the United Kingdom, Belgium, and Germany in competition for the trade in dishes and tableware.

A business of about \$500,000 a year is done in vegetable and other fibers. Bags and burlaps come chiefly from the British East Indies, cloths from the United Kingdom and China, cordage from the United States, shoes (alpargatas) from Spain, and yarn from the United States, the United Kingdom, and Germany.

The imports of fish and fish products, including shellfish, amount to about \$650,000 a year. The United States supplies the larger part of the demand for (imported) fresh fish, canned salmon and other canned fish, and about one-quarter of the shellfish. Spain supplies most of the call for sardines, its trade being \$228,000 in 1911 and \$131,000 in 1912. China and Japan meet a demand for shellfish to the amount of about \$65,000 yearly.

The fruit and nut trade of 1910, 1911, and 1912 was, respectively, \$282,000, \$328,000, and \$418,000. The United States and Japan supply apples, lemons come from the United States and Italy, oranges from the United States and China, and other fresh fruits come from China and Spain. Raisins and other dried fruits and canned and preserved fruits come in large part from the United States and Spain. China is the principal source of supply for nearly \$100,000 worth of nuts.

GLASS AND GLASSWARE.

The trade in glass and glassware for the last three years has been, respectively, \$240,000, \$300,000, and \$332,000. The business is widely scattered, and most of the amounts are comparatively small. Germany supplies a large part of the empty glass bottles, with Japan second on the list. Japan led in lamp chimneys in 1912. Belgium and China led in mirrors, the United States in spectacles and eye-glasses, and Belgium in window glass.

IRON AND STEEL.

The trade in manufactures of iron and steel is large, and it covers a wide variety of articles, from steel rails to fishhooks. The total for 1911 was \$5,887,185; for 1912, \$6,031,603. While a number of countries appear on the list of sources of supply, much the greater part of

the imports comes from a few, the United States and the United Kingdom leading by long margins. Some of the items are as follows:

Articles and countries.	1911	1912	Articles and countries.	1911	1912
Pig iron.....	\$26,538	\$28,510	Structural iron and steel.....	\$219,134	\$67,919
United States.....	10,170	520	United States.....	200,476	58,071
United Kingdom.....	15,570	27,990	United Kingdom.....	17,224	6,321
Bar iron.....	92,573	69,470	Tools.....	254,865	231,256
United Kingdom.....	35,300	19,872	United States.....	164,715	160,147
Belgium.....	43,054	41,398	United Kingdom.....	35,685	23,096
Bars or rods of steel.....	279,266	440,448	Germany.....	42,740	34,099
United States.....	232,939	393,617	Pocket cutlery.....	49,116	38,227
United Kingdom.....	26,377	24,171	Germany.....	44,765	33,540
Steel rails.....	181,906	349,223	Enameled ware.....	117,129	145,147
United States.....	114,709	270,723	Austria-Hungary.....	26,817	58,229
Germany.....	43,270	54,187	Germany.....	71,707	61,250
Corrugated roofing.....	560,330	672,012	Sugar machinery.....	507,902	361,013
United States.....	473,343	629,914	United States.....	157,775	47,049
United Kingdom.....	86,088	42,048	Hawaii.....	215,000	309
All other sheets and plates....	274,298	226,206	United Kingdom.....	135,127	313,610
United States.....	229,072	196,537			
United Kingdom.....	33,419	23,315			

In a number of lines of iron and steel, the trade of the United States is so far ahead of that of its competitors that details are needless here. For the volume of trade in those lines reference may be made to the table of trade between the islands and the United States elsewhere in this pamphlet.

The trade in lamps, chandeliers, etc., amounting to \$140,000 in 1912, is divided, in its larger part, between the United States and Germany.

The business in leather and its manufactures amounted to \$760,000 in 1910, to \$994,000 in 1911, and to \$1,025,807 in 1912. The United States is the source of supply for a very large part, including sole leather, upper leather, boots and shoes, belting, harness and saddles, etc. The imports of boots and shoes from the United States in 1912 were valued at \$545,000, an increase of \$200,000 in the last four years.

MEAT AND DAIRY PRODUCTS.

Australasia practically controls the trade in fresh meats. Its shipments in 1912 amounted to \$1,098,418 in a total of \$1,112,090. The United States holds a long lead in canned meat. In a total account of \$82,650, in 1912, for bacon, the American account was \$58,000 and the Australasian was \$21,350. In a total of \$191,000 for hams and shoulders, the account of the United States was \$47,000, of the United Kingdom \$49,000, of China \$11,600, and of Australia \$82,000. The total imports of lard, in 1912, were \$184,000, with \$70,570 from the United States, \$80,000 from China, and \$25,000 from Australasia. The supply of \$148,000 worth of lard compounds and substitutes for lard came entirely from the United States.

In a butter supply of \$276,962, the account of Australia was \$201,000, and the account of Denmark was \$64,368. In cheese purchases amounting to \$73,700, the account of the Netherlands was \$62,000. Imports of unsweetened condensed milk in 1912 amounted to \$262,000, and of sweetened, \$504,000. The United States supplied \$209,000, and Norway \$30,000 of unsweetened, and the United Kingdom supplied \$463,000 of the sweetened. Of the sweetened, Norway shipped \$17,000 and Australasia \$10,000. Switzerland shipped \$67,000 of "fresh milk" in a total of \$110,000.

The total value of meat and dairy products imported in 1910, 1911, and 1912 was, respectively, \$2,377,466, \$2,900,028, and \$3,541,274.

OILS—PAINTS, ETC.—PAPER.

Imports of mineral, vegetable, and other oils show a total value for 1910, 1911, and 1912 of, respectively, \$1,501,244, \$1,478,684, and \$1,880,952. About two-thirds of the total is refined mineral oil for illuminating purposes and all except a small quantity came from the United States. This country also supplies much the greater part of all other mineral oils. The United Kingdom does the leading business in linseed oil, Spain in olive oil, and China in peanut oil. The imports of the latter in 1912 amounted to \$86,250.

The United Kingdom leads in sales of red lead, white lead, and zinc oxide. The United States leads in the combination of all other paints, pigments, and colors. The total trade in this line was \$266,000 in 1912.

The total trade in paper in 1910, 1911, and 1912, was, respectively, \$638,828, \$792,968, and \$758,044. The distribution of the trade, by divisions of the industry, was as follows:

Articles and countries.	1911	1912	Articles and countries.	1911	1912
Blank books and headed paper.....	\$56,624	\$44,437	Wrapping paper.....	\$88,051	\$64,642
United States.....	36,294	21,423	United States.....	33,161	24,001
Netherlands.....	4,019	5,501	Germany.....	24,885	16,858
China.....	6,727	6,732	Spain.....	7,849	12,825
Cigarette paper.....	134,958	170,842	Writing paper and envelopes..	152,800	96,215
Austria-Hungary.....	40,567	75,703	United States.....	119,007	55,497
France.....	78,632	79,938	Spain.....	17,898	18,053
Spain.....	14,123	14,348			
Printing paper.....	134,747	171,747			
United States.....	101,992	144,027			
Germany.....	19,990	18,450			

RICE—SILK—SOAP—WINES, ETC.

Rice is imported in very large, though varying quantities. The country should produce enough for its own needs and for a considerable export. It has, however, in the last few years been the victim of several widespread misfortunes that have compelled rice imports to avert a general famine. For these supplies, amounting to more than \$5,000,000 in 1910, to more than \$6,000,000 in 1911, and to more than \$10,000,000 in 1912, draft is made chiefly on the French East Indies, with large supplementary supplies from the British East Indies and Siam.

The popularity of articles of silk and the ability of some of the island people to purchase it, is attested by imports amounting to \$635,000, \$767,000, and \$844,000, for the three years here considered. China, Japan, and France supply the fabric in cloth, and Japan and France lead in clothing and other wearing apparel. The United Kingdom and Germany supply the greater part of the plushes and velvets, and the United States, France, and Germany the greater part of the ribbons.

The soap trade shows a marked gain in the last few years, the imports having risen from \$70,000 in 1908 to \$264,000 in 1912. The United States and the United Kingdom are the leading sources of supply for both toilet and other soaps.

There is a local supply of beer and of native distilled and fermented liquors, but the imports, doubtless largely for the consumption of the American and European elements in the community, average about \$500,000 a year. Of this, malt liquors from the United States and the United Kingdom represent about one-quarter; brandy, from Spain and France, averages about \$30,000; rye whisky, from the United States, averages somewhat over \$60,000; and other whiskies, chiefly from the United Kingdom, were valued at \$54,000 in 1912. Imports of wines, averaging about \$150,000 a year, came chiefly from Spain.

SUGAR AND MOLASSES—TOBACCO—VEGETABLES.

Raw sugar is exported and refined sugar is imported in steadily increasing quantity. The imports of this commodity in 1908 were valued at a little over \$100,000 and those of 1912 at \$333,000. Hong-kong is the principal source of supply, with smaller quantities from the United States and the Dutch East Indies.

Imports of tobacco, amounting in 1912 to \$226,000, represent the requirement of the foreign population. Nearly one-half is smoking tobacco, most of it from this country. There was in 1912 an American demand for American cigarettes, amounting to \$15,000. Imports of plug tobacco amounted to \$51,000 in 1912. Imports of cigars are very small.

Imports of vegetables were valued at \$665,000 in 1910, \$705,000 in 1911, and \$810,000 in 1912. The sources and values were as follows:

Articles and countries.	1910	1911	1912
Onions.....	\$109,724	\$105,414	\$119,797
Japan.....	71,973	60,278	63,287
China.....	12,403	13,504	14,398
Australasia.....	17,250	24,808	32,020
Potatoes.....	234,680	189,141	174,619
Japan.....	209,261	171,701	147,258
All other fresh vegetables ¹		40,482	52,398
Canned vegetables.....	115,568	174,906	234,895
United States.....	53,501	103,447	161,845
Spain.....	35,927	37,045	40,365
Dried beans ¹		66,532	83,187
United States.....		18,711	25,917
China.....		39,024	47,848
Dried peas ¹		21,812	22,182
Spain.....		12,766	13,290
Pickled vegetables ¹		41,010	56,035
Sauces ¹		41,375	40,683

¹ Not stated separately prior to July 1, 1910.

WOOD—WOOLEN CLOTHING.

The value of wood and manufactures of wood imported in the last three years has been, for 1910, \$488,677; for 1911, \$874,315; for 1912, \$696,407. Most of the ties for the new railways came from Australasia, and the timber supply is in large part divided between that country and the United States. Germany leads, and the Netherlands follow, in sales of cigar-box material to a value of about \$70,000 yearly, an account that seems likely to increase. Nearly all of the pine, redwood, and other lumber comes from the Pacific slope. Austria-Hungary controls a large part of the market for bent

wood furniture, and the United States furnishes about three-quarters of the supply of general furniture. A considerable part of the market need in this line is met by local industries.

Imports of woolen fabrics, cloth, clothing, and other wearing apparel, flannels and blankets, yarns, etc., are valued at about \$325,000 a year, for 1911 and 1912. About one-half of the cloth is bought in England, and most of the remainder is divided between France, Germany, and Belgium. Most of the manufactured clothing comes from the United States. Purchases of cloth for the last two years have been a little more than \$160,000 a year, and purchases of clothing and wearing apparel about \$67,000.

TRADE EXTENSION.

The trade of the Philippine Islands gives every promise of expansion with the improvement of social and economic conditions. The rapidity of its increase and its volume depend mainly upon the expansion of its producing industries. Most of these depend mainly if not entirely upon the investment of capital. There is much that can be done by the Filipinos as individual small farmers. The cultivation of sugar, or hemp, or tobacco, or coconuts, on a small scale, may somewhat increase but will not greatly expand those industries upon which the purchasing power of the islands must largely depend. A very important factor in the increase in the American account has been the presence of thousands of Americans, some permanent and some transient, some in official life and some engaged in business. It is impossible to determine with accuracy the trade increase that can be attributed strictly to a greater demand on the part of the native people, and it is evident that any great and permanent increase in purchases abroad must come from those people, from an enlargement of their wants and a greater ability to gratify them. Hitherto, the life of the people has been, as a whole, distinctly primitive. Their wants have been few and easily gratified. Almost a minimum of labor supplied their food and clothing, and little more was needed or wanted.

THE PROBLEM OF LAND TITLES.

The economic future of the islands will undoubtedly be determined by what can be grown from the ground. The purchases from abroad will be determined by the surplus produced for export. An exceedingly serious problem appears in connection with the agricultural interests, the question of land titles. In the report of the Philippine Commission, for 1911, the statement is made that "there are now some 2,250,000 parcels of land in the islands, but title to less than 9,000 parcels has been settled by decree of the court of land registration." Most of the many thousands of small farmers are, in effect, squatters occupying and cultivating such little parcels of land as may serve their purposes. A vigorous effort is being made by the insular government to make surveys and to induce registration, but the process is exceedingly slow and it encounters many and almost insuperable obstacles in the attitude of the people themselves, accustomed as they are to the old system. The matter of land holdings and cultivation is of the utmost importance in the commercial development of the Philippines. The change in this issue since the census

was taken has not been great, if any real change has occurred, aside from a probable increase in the total number of so-called "farms." The total number of farms at that time is given as 815,453, of which nearly half (49.8 per cent) are less than $2\frac{1}{2}$ acres in size, while the average for all is about $8\frac{1}{2}$ acres and, on an average, only about half of that is cultivated. The report states that "these small parcels of land, many of them no larger than ordinary kitchen gardens in the United States, are resided upon, cultivated by, and contribute materially to the subsistence of, their owners or occupants." With such conditions as a basis, any large production by the small farmer in excess of his own needs is quite impossible.

SALE OF LANDS.

There is still another point for consideration. The lands of the islands have been somewhat broadly classified as "private lands," estimated at 7,000,000 acres; "public lands," estimated at 60,000,000 acres; and "friar lands," reported as about 400,000 acres. The organic act, approved July 1, 1902, prohibits the acquisition, by an individual, of more than 40 acres of public land, or the acquisition, by a corporation, of more than 2,500 acres. In a report accompanying a resolution submitted on March 3, 1911, Mr. Olmsted, the chairman of the Committee on Insular Affairs, said: "There have been 62 sales of public lands made by the Philippine government since the passage of the organic act of 1902, covering an area of 14,790 acres. Ten of these purchasers were corporations whose purchases aggregated 13,177 acres." The remainder, 1,613 acres, was sold to 52 individuals.

In his annual reports, Hon. Dean C. Worcester, the secretary of the interior of the Philippine government, protests vehemently that agricultural progress under such conditions as exist in the islands is practically impossible. In his report for 1911, Mr. Worcester says:

The Philippines are essentially an agricultural country. They are almost unprecedentedly rich in unoccupied, uncultivated, well-watered agricultural public lands. The islands are capable of producing a very considerable proportion of the tropical products imported into the United States. There is at present a lamentable lack of capital for the legitimate development of these enormous natural resources, and there are a large number of unemployed laborers, willing and able to render efficient service if they can obtain a living wage. The existing limitation on the amount of public land which may be sold to an individual absolutely prevents the acquisition by any individual of land enough to justify him in entering commercially upon such an enterprise as the cultivation of rice with modern agricultural machinery.

Customs and habits of life that have been established by an experience covering several generations are not readily changed. The substitution of modern methods of agriculture on larger plats of land for the present system of drawing a living from a small patch will probably come tardily. There is no reason to believe that the present forward trade movement has reached its height, but there is no reason to believe that outside of, at most, the three industries of sugar, tobacco, and copra there will be any great industrial expansion in the immediate future. The failure of the rice crops of the islands, by which enormous imports have been made necessary, is an economic accident that may or may not soon be repeated. The work of the various scientific bureaus now operating under the control of the insular government should do much to avert a repetition of the experience.

PHILIPPINE TARIFF.

There will doubtless be a further increase in the imports, and a large part of it will doubtless be drawn from the markets of the United States. Another source of possible increase in the sales of this country is in successful competition with the sellers of other countries. There is much of the business that could only be brought here by including the islands within the tariff walls of the United States, a now highly improbable experience. Imports are now subject to duty under the Philippine tariff act, approved August 5, 1909, immediately following the approval of the so-called Payne bill of the same date. A section of the Philippine act reads thus:

SEC. 12. That all articles, except rice, the growth, product, or manufacture of the United States and its possessions to which the customs tariff in force in the United States is applied and upon which no drawback of customs duties has been allowed therein, going into the Philippine Islands shall hereafter be admitted therein free of customs duty when the same are shipped directly from the country of origin to the country of destination: *Provided*, That direct shipment shall include shipment in bond through foreign territory contiguous to the United States. Said articles shall be as originally packed without having been opened or in any manner changed in condition.

This gives a distinct advantage to American producers in certain lines. There are other lines in which, for one reason or another, other markets hold an advantage over the American, as in sales of coal, fresh meat, fresh vegetables, etc. There are still other lines in which competition is active and the trade divided, such as cotton goods and silk fabrics. The increase in the sales of this country to the islands represents a greater demand there and also a greater interest here. It may be assumed that the interest will enlarge and that American dealers, through greater activity and by the exercise of an increased selling energy, will still further expand their business in the Philippines. New agencies will be opened and new side lines taken on as our people become more familiar with the markets of the Archipelago and with their special requirements.

IMPORTS FROM THE UNITED STATES.

As shown on a preceding page, the purchases from the United States have grown from \$4,000,000 in 1903 to more than \$20,000,000 in 1912. In those 10 years American sales of breadstuffs to the islands have increased from \$279,000 to \$1,350,000; of manufactures of cotton, from \$316,000 to \$4,240,000; of iron and steel articles, from \$657,000 to \$4,250,000. Many lines show similar or larger percentage of increase. The business of the last three years is shown in detail on the following pages. The figures quoted on the preceding pages are taken from the statements of imports of the islands as reported through the Bureau of Insular Affairs of the War Department. The tables of commerce between this country and the islands are taken from the export reports of the United States, as published by the Bureau of Foreign and Domestic Commerce of the Department of Commerce and Labor.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Agricultural implements, and parts of:										
Mowers and reapers, and parts of						\$3,660	\$1,224	\$3,084	\$35,339	\$11,277
Plows and cultivators, and parts of						6,823	9,522	16,453	25,702	27,696
All other, and parts of						14,493	27,891	8,634		
Aluminum, and manufactures of						2,022	447	2,671		
Animals						463		353	785	3,504
Art works: Paintings and statuary						36	51	775	1,781	619
Blacking						18,334	19,506	32,250	15,194	32,481
Brass, and manufactures of						28,979	62,719	78,055	69,488	73,675
Breadstuffs:										
Barley			1,042	3,350	5,072			674	2,286	5,009
Bran, middlings, and mill feed	323	144	57			9,309	4,609	1,860		
Bread and biscuit	17,025	33,397	116,588	69,968	151,285	1,291	2,364	9,314	4,973	10,998
Corn				160					153	
Corn meal	189	879	445	476	277	745	3,711	1,451	1,719	967
Oats	328,983	817,483	601,685	469,117	498,653	171,467	427,818	288,471	215,497	243,876
Oatmeal and rolled oats	67,930	50,359	143,273	70,485	82,648	2,927	2,072	5,934	3,389	3,662
Rice					2,480					148
Wheat				45					53	
Wheat flour	68,045	80,088	250,442	226,629	308,671	273,970	326,805	1,049,611	887,376	1,264,275
Preparations of, for table food						28,800	34,249	38,225	28,784	45,681
All other						2,204	501	284	117	1,069
Broom corn					9		225	75		943
Brooms and brushes						14,564	22,430	41,585	41,786	25,252
Buttons and parts ¹								4,357	5,328	4,528
Candles								9,418	2,861	4,935
Cars, carriages, other vehicles, and parts of:						137	1,048			
Automobiles	16	24	130	309	401	14,897	27,410	175,626	382,551	557,368
Parts of automobiles						1,781	7,859	17,154	62,581	62,631
Cars—										
For steam railways						144,108			2,144	13,302
For other railways						44,452	8,629	34,837	145,811	67,807
Cycles and motor cycles, parts of, except tires						6,073	15,973	29,836	76,149	118,158
Wheelbarrows, pushcarts, and hand trucks						10,596	20,784	30,457	17,696	23,664
All other						39,721	49,340	85,626	64,911	59,493
Celluloid, and manufactures of						532	696	818	1,853	2,704
Cement	84	18,515	69,946	5,535	210	168	21,535	82,772	6,148	326
Chemicals, drugs, dyes, and medicines:										
Acids						2,384	3,993	5,215	3,699	8,483
Baking powder			60,165	81,558	128,991	20,735	31,912	19,087	26,512	39,201
Calcium carbide ²	59,810	103,633	98,440	264,068	237,149			3,489	11,312	9,447
Medicines, patent or proprietary						66,556	46,128	106,914	114,795	156,285
All other						87,681	132,609	203,413	248,103	231,837

¹ Included in "All other articles" prior to July 1, 1909.

² Included in "All other chemicals, drugs, and dyes" prior to July 1, 1909.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Clocks and watches, and parts of:										
Clocks, and parts of.....								\$7,574	\$13,769	\$23,072
Watches, and parts of.....								8,325	3,048	2,457
Coal and coke:										
Coal—										
Anthracite.....tons.										975
Bituminous.....do.	113,474	116,562	162,680	43,273	55	328,250	319,439	425,914	130,176	90
Coke.....do.			88	70	251			1,970	1,255	5,200
Cocoa and chocolate, prepared or manufactured (except confectionery).....						5,798	9,566	7,174	11,852	24,100
Coffee:										
Green or raw.....pounds.	1,200	1,287	190,189	1,078,602	1,250,699	132	144	22,680	151,131	232,290
Roasted or prepared.....do.	108,138	227,036	340,354			17,431	39,930	60,163		
Copper, and manufactures of.....						24,180	22,188	69,272	63,597	52,496
Cork, and manufactures of.....						1,850	14,750	4,178		
Cotton, and manufactures of:										
Unmanufactured—Upland and other, including linters.....pounds..	315,757	779,671	578,142	474,434	767,671	35,993	78,363	76,350	70,316	83,942
Manufactures of—										
Cloths—										
Unbleached.....yards..	136,119	123,906	6,451,578	4,678,926	6,630,770	14,340	13,646	462,122	396,697	464,243
Bleached.....do.	14,396	15,148	1,587,213	8,882,013	15,481,853	3,883	1,177	107,777	599,930	1,093,108
Dyed, colored, stained, printed.....do.	9,758,902	11,650,758	29,691,162	32,252,951	46,868,396	561,883	520,816	1,595,378	2,407,537	2,495,501
Clothing and other wearing apparel—										
Knit goods.....						41,324	33,477	32,457	48,434	49,439
All other.....						136,506	288,707	420,737	387,848	543,117
All other manufactures.....						78,909	201,219	317,927	465,072	631,784
Dental goods ¹							6,335	7,860	8,197	9,435
Earthen, stone, and china ware:										
Bricks and tiles.....						5,089	8,380	8,358	2,453	3,664
Earthen and stone ware.....						8,301	3,812	13,414	22,177	17,844
China ware.....						3,065	4,832	9,406	6,350	7,177
Emery and corundum, and manufactures of ²								5,672	9,295	
Explosives:										
Cartridges.....	539,800	462,250	207,062	173,857		412,085	691,809	579,427	501,888	226,791
Dynamite.....pounds..	279,631	84,946	153,239	122,006	405,847	59,815	53,485	22,060	18,855	38,822
Gunpowder.....do.					284,121	84,176	42,751	57,323	30,572	280,669
All other.....						305,416	187,822	392,195	76,584	76,842
Feathers.....						115	1,672	94	2,634	
Felt and similar material for roofing.....						8,226	10,958	15,870	12,457	15,096
Fibers, vegetable, and textile grasses, manufactures of:										
Bags.....						5,308	36	10		61
Cordage.....pounds..	63,361	278,706	553,628	100,239	355,909	6,952	24,819	48,969	9,166	28,510
Twine.....						7,113	3,049	2,702	1,823	4,644
All other.....						13,899	1,397	7,076	11,606	4,100

Fish:	Dried, smoked, or cured.....pounds.....	12,700	39,277	25,020	66,871	42,018	1,046	2,957	2,321	3,858	4,045
	Pickled.....barrels.....	145	4	6	33	.....	1,548	104	66	522	.....
	Salmon—										
	Canned.....pounds.....	1,171,834	1,126,470	5,425,404	3,069,118	5,096,810	84,533	74,792	396,604	225,885	422,001
	All other.....	.....	.....	.....	.....	.....	.....	712	2,089	3,542	2,437
	Canned fish (except salmon and shellfish).....	.....	.....	.....	.....	.....	.....	14,457	11,946	11,055	20,083
	Shellfish—										
	Oysters.....	.....	.....	.....	.....	.....	9,184	10,620	11,188	9,100	12,700
	All other.....	.....	.....	.....	.....	.....	2,767	3,646	8,383	9,259	10,432
	All other fish and fish products.....	.....	.....	.....	.....	.....	1,368	1,224	4,482	4,487	6,204
Fruits and nuts:	Fruits—										
	Apples, green or ripe.....barrels.....	1,040	1,026	2,313	3,202	3,207	3,494	2,461	6,711	14,064	16,591
	Oranges.....boxes.....	859	633	1,331	1,710	4,186	2,441	1,512	4,184	5,344	13,190
	Prunes.....pounds.....	1,394	14,006	41,555	37,360	96,232	104	846	2,420	3,032	7,825
	Raisins and other dried grapes.....do.....	4,830	25,984	110,146	204,015	320,390	429	1,639	6,906	12,942	23,113
	All other, green, ripe, or dried.....	.....	.....	.....	.....	.....	12,666	16,295	12,929	15,660	25,673
	Prepared or preserved—										
	Canned.....	.....	.....	.....	.....	.....	31,766	56,378	63,207	57,208	106,250
	All other.....	.....	.....	.....	.....	.....	3,993	6,516	6,183	5,759	10,852
	Nuts.....	.....	.....	.....	.....	.....	350	341	2,109	1,715	2,840
Furniture of metal.	Furniture of metal.....	.....	.....	.....	.....	.....	3,641	20,199	14,443	3,171	15,525
	Furs and fur skins.....	.....	.....	.....	.....	.....	.....	6,576	.....	12,817	19,979
	Glass and glassware:										
	Cylinder, crown, and common window glass.....	.....	.....	.....	.....	.....	457	1,503	2,102	29,420	251
	All other.....	.....	.....	.....	.....	.....	20,135	33,976	46,810	22,814	52,279
	Glucose.....pounds.....	245,923	70,272	.....	114,644	.....	5,700	1,622	.....	2,832	.....
	Glue.....do.....	5,232	9,287	17,709	.....	.....	628	1,159	2,116	.....	.....
	Gold and silver, manufactures of.....	.....	.....	.....	.....	.....	695	4,952	7,047	7,840	28,953
	Grease, lubricating, and other.....	.....	.....	.....	.....	.....	7,714	8,585	18,600	18,790	19,183
	Hair, and manufactures of.....	.....	.....	.....	.....	.....	1,326	720	17,240	454	542
Ink:	Hay.....tons.....	13,330	14,730	12,916	8,108	15,034	294,330	366,266	318,804	179,248	292,385
	Household and personal effects ³.....	.....	.....	.....	.....	.....	.....	.....	.....	109,139	97,774
	India rubber, manufactures of:										
	Belting, hose, and packing.....	.....	.....	.....	.....	.....	32,368	39,691	52,680	106,206	93,545
	Boots and shoes.....pairs.....	11,882	2,997	3,812	6,403	5,485	9,139	2,204	3,849	6,487	6,734
	Tires ⁴ —										
	For automobiles.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	All other.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	All other.....	.....	.....	.....	.....	.....	82,398	73,652	99,528	197,580	73,763
	All other.....	.....	.....	.....	.....	.....	.....	.....	.....	87,079	103,488
Instruments and apparatus, electrical, and for scientific purposes:	Printers'.....	.....	.....	.....	.....	.....	7,210	1,173	2,693	20,600	21,206
	All other.....	.....	.....	.....	.....	.....	8,621	6,371	10,300	.....	.....
	Electrical appliances, including telegraph and telephone instruments.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	All other ⁵.....	.....	.....	.....	.....	.....	112,839	185,147	239,261	317,877	355,321
	.....	.....	.....	.....	.....	.....	60,313	50,814	49,016	58,804	54,660

¹ Included in "All other articles" prior to July 1, 1908.

² Included in "All other articles" prior to July 1, 1909.

³ Included in "All other articles" prior to July 1, 1910.

⁴ Included in "All other manufactures of india rubber" prior to July 1, 1910.

⁵ Includes "Phonographs, graphophones, etc.," prior to July 1, 1909.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Iron and steel, manufactures of:										
Pig iron.....	77	100	300	107	234	\$1,656	\$1,750	\$5,616	\$1,900	\$5,085
Bar iron.....	242,540	2,286,349	508,469	24,112	3,979	5,848	35,644	9,573	35,388	135
Bars and rods of steel.....	4,789,427	7,635,531	5,517,834	14,866,124	20,768,376	83,392	116,193	93,299	253,541	451,273
Rails for railways, of steel.....	12,262	2,381	4,684	11,296	2,811	383,625	71,983	145,094	345,409	82,980
Sheets and plates—										
Iron.....	5,617,115	8,757,414	14,143,435	19,700,362	25,350,958	177,117	287,982	467,909	676,888	833,602
Steel.....	229,994	595,172	658,197	1,922,629	2,903,584	5,691	10,007	12,798	34,084	82,163
Tinplates, terneplates, and taggers tin.....	13,686	16,923	177,594	470,465	866,627	7,696	635	7,488	20,705	30,986
Structural iron and steel.....	6,680	5,003	1,864	3,287	2,599	423,482	294,484	82,751	185,746	107,890
Wire—										
Barbed.....	1,287,961	690,428	1,577,486	2,365,414	4,115,895	37,806	17,575	41,596	61,181	106,169
All other.....		873,125	313,909			8,791	25,742	8,791		
Builders' hardware and tools—										
Locks, hinges, and other builders' hardware.....										
Saws.....						71,296	96,573	88,164	98,776	109,295
Tools, n. e. s.....						8,727	10,964	14,581	37,851	37,498
Car wheels.....	23	162	510	144	310	84,920	73,321	106,301	114,380	130,918
Castings, n. e. s.....						175	1,223	2,172	918	1,569
Cutlery—										
Table.....						18,990	20,628	10,087	19,645	23,278
All other.....						427	2,190	319	29,135	31,521
Firearms.....						10,806	8,723	24,191	233,906	111,086
Machinery, machines, and parts of—						725,399	100,299	256,929		
Adding machines ¹									9,947	9,987
Cash registers.....	14	32	173	24	111	1,831	2,059	9,103	1,675	8,929
Electrical machinery.....						161,467	49,309	121,037	150,916	116,648
Metal-working machinery (including metal-working machine tools).....										
Mining machinery.....						29,718	10,183	8,933	23,387	19,162
Printing presses.....						28	5,617	24,913	60,283	124,484
Pumps and pumping machinery.....						2,385	18,486	9,428	15,940	21,566
Refrigerating and ice-making machinery ¹						28,559	20,319	36,503	49,574	46,340
Sewing machines.....									52,972	29,868
Steam and other power engines, and parts of—						5,674	10,266	27,277	119,708	315,623
Locomotives.....	10	3	1	6	1	63,882	22,211	6,636	19,855	4,922
Stationary.....	165	57	39	129	28	63,403	37,067	11,930	42,059	22,207
All other engines and parts of.....						39,736	37,899	82,661	125,890	198,440
Sugar-mill machinery ¹									329,247	115,997
Typewriting machines.....						63,465	68,765	79,361	119,165	136,142
Woodworking machinery.....						10,164	20,311	16,780	24,862	
All other machinery.....						390,402	430,080	344,222	289,366	413,477
Nails and spikes—										
Wire.....	1,478,785	1,648,555	2,943,955	2,314,566	4,278,698	41,088	40,008	70,849	55,632	103,179
All other (including tacks).....	200,769	323,896	409,806	965,534	266,201	5,760	9,949	13,428	25,744	9,046

Pipes and fittings.....do.....	4,749,677	4,387,236	5,286,739	7,839,778	8,131,091	128,068	144,359	183,984	237,043	217,046
Safes.....number.....	369	146	254	574	660	19,391	7,362	12,924	29,630	31,002
Scales and balances.....						6,419	33,700	30,275	29,672	11,177
Stoves, ranges, and parts of.....						15,435	10,566	16,862	23,975	22,602
All other manufactures of iron and steel.....						356,418	336,616	920,502	927,474	863,997
Jewelry.....						1,251	396	4,532	18,054	15,593
Lamps, chandeliers, and all other devices for illuminating purposes (except electric).....						23,844	31,013	47,303	78,846	63,986
Lead, manufactures of.....						67,934	63,497	61,652	25,463	29,262
Leather and tanned skins, and manufactures of:.....										
Leather and tanned skins—										
Sole.....pounds.....	47,229	58,219	106,885	95,846	152,623	15,270	18,817	35,146	30,358	48,552
Upper.....						48,806	65,919	104,813	124,233	104,934
All other.....						40,522	54,305	57,651	82,578	90,588
Manufactures of—										
Boots and shoes.....pairs.....	350,389	119,476	258,669	281,412	327,478	565,487	219,746	527,078	515,961	657,718
Harness and saddles.....						65,569	69,033	116,799	69,052	49,633
All other manufactures of.....						83,092	39,241	42,911	34,122	29,324
Meat and dairy products:										
Meat products—										
Beef products—										
Beef, canned.....pounds.....	588,075	365,538	540,422	200,007	1,179,511	58,385	40,202	67,710	24,340	174,476
Beef, pickled and other cured.....do.....	1,560	480	1,290	120	2,000	290	90	158	25	131
Oleomargarine, imitation butter.....do.....	3,021	1,000		1,880	4,250	302	100	362	500	
Tallow.....do.....	2,520		4,905			140		344		
Hog products—										
Bacon.....do.....	301,515	571,211	684,391	542,762	1,051,373	48,723	87,529	108,572	109,188	184,525
Hams and shoulders.....do.....	136,969	182,653	355,563	236,764	430,736	20,971	26,226	53,758	44,390	67,589
Pork—										
Canned.....do.....	75,550	97,719	53,729	6,588	46,237	9,978	16,009	10,464	771	8,275
Fresh.....do.....			51,442	48,371	75,973			6,793	7,552	13,114
Pickled.....do.....	54,185	600	12,100	40,000	50,467	6,094	98	1,819	5,750	6,547
Lard.....do.....	335,737	354,534	354,468	429,731	496,786	34,496	37,607	47,800	53,926	56,762
Lard compounds, and other substitutes for lard.....pounds.....	231,937	436,855	159,850	311,633	2,621,129	18,996	35,950	15,451	29,963	219,637
Poultry and game.....						70	1,050	33	24	140
Sausage and sausage meats.....pounds.....	123,702	242,569	300,908	127,779	451,312	12,019	37,260	32,943	14,177	62,335
All other meat products—										
Canned.....						26,830	49,849	116,824	77,757	138,769
All other.....						18,663	8,904	4,302	2,439	9,055
Dairy products—										
Butter.....pounds.....		11,642	332	15,890	16,540		2,975	102	3,652	4,133
Cheese.....do.....	1,163	1,114	5,260	8,064	5,969	223	195	1,031	1,705	1,261
Milk, condensed.....do.....			1,998,829	3,056,286	3,065,870	157,602	124,790	163,785	235,681	218,306
Motor boats.....number.....	2	8	6	16	5	3,055	17,715	1,127	8,739	1,618
Musical instruments, and parts of:										
Pianos (including player pianos).....do.....	2	1	16	133	172	365	300	4,043	25,797	30,478
All other, and parts of.....						3,324	22,088	5,994	6,490	13,120
Naval stores:										
Rosin, tar, turpentine, and pitch.....pounds.....	512	371	823	222	973	2,151	1,641	3,558	1,452	5,716
Turpentine, spirits of.....gallons.....	13,185	39,650	13,959	28,350	72,634	7,958	19,818	10,067	23,998	45,414
Oilcloth.....						27,833	29,891	51,730	32,125	34,925

¹Included in "All other machinery" prior to July 1, 1910.

²Quantity not stated prior to July 1, 1909.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Oils:										
Animal.....gallons..	3,510	11,975	4,751	3,404	18,008	\$2,504	\$10,293	\$4,544	\$2,856	\$10,952
Mineral—										
Crude (including all natural oils).....do....		4,594	23,880	8,564	25,815		322	1,651	675	638
Refined or manufactured—										
Naphthas, and all lighter products..do....	99,760	209,170	137,390	548,965	1,463,714	16,036	29,713	16,916	75,205	219,395
Illuminating oil.....do....	10,097,393	8,997,610	6,265,167	9,887,437	14,054,707	1,008,934	936,693	505,803	794,455	1,134,908
Lubricating and heavy paraffin oil..do....	269,099	233,286	435,897	400,936	492,365	59,940	58,136	95,585	85,531	116,529
Residuum (including tar) and all other										
.....gallons..			6,300	250	72,095			567	24	3,944
Vegetable—										
Fixed or expressed—										
Cottonseed.....pounds..	548	383	600	4,500	8,317	57	25	48	359	591
Linseed.....gallons..	4,477	2,000	21,144	9,474	25,774	2,338	1,271	17,063	10,491	19,574
All other.....						1,489	5,408	7,383	3,846	3,862
Paints, pigments, and varnishes:										
Varnish.....gallons..	12,904	14,956	27,082	20,495	15,115	12,549	17,460	27,514	21,488	16,664
All other (including crayons).....						33,559	93,599	166,228	167,530	211,978
Paper, and manufactures of:										
Books, music, maps, engravings, etc.										
Paper hangings.....						94,711	156,199	223,899	206,296	336,446
Playing cards.....								198		
Printing paper.....pounds..	901,822	858,040	1,846,381	3,119,868	4,607,205	7,958	4,959	14,842	9,213	5,152
Writing paper and envelopes.....						29,577	28,721	61,380	114,644	149,652
All other.....						52,119	29,783	105,727	129,872	111,169
Paraffin and paraffin wax.....pounds..	1,025,480	544,723	855,520	1,610,357	1,119,027	118,112	124,621	167,962	169,924	170,794
Perfumeries, cosmetics, and toilet preparations						52,150	23,179	47,040	64,643	53,648
Photographs, graphophones, records for, etc.¹						15,178	24,568	50,643	40,896	63,213
Photographic goods.....								47,554	91,829	67,320
Plated ware.....								49,573	142,872	138,118
Salt².....pounds..	8,000	8,800	83,800					21,972	34,791	31,147
Seeds.....						5,449	17,512	84		5,843
Silk, manufactures of.....						114	5,682	535	622	236
Soap:						4,370	2,972	5,581	21,576	41,701
Toilet or fancy.....										
All other.....pounds..	381,152	397,924	582,503	701,560	2,073,963	21,637	17,378	26,571	44,501	62,941
Spirits, wines, and malt liquors:						21,960	22,917	28,423	41,244	96,952
Malt liquors.....dozen quarts..	26,256	49,960	40,816	47,672	30,489	35,046	74,280	69,614	79,326	47,844
Spirits, distilled—										
Whisky—										
Bourbon.....proof gallons..	9,151	14,599	17,401	13,900	8,871	18,410	26,325	31,694	18,168	15,959
Rye.....do....	24,860	28,037	32,674	21,083	34,353	45,056	40,885	60,578	43,941	59,335
All other distilled spirits.....do....	860	936	10,373	10,819	5,642	1,734	8,634	15,460	13,556	6,924
Wines.....gallons..	4,342	8,874	46,522	12,186	27,003	3,355	3,766	15,652	6,746	15,048
Starch.....pounds..	26,912	43,193	57,043	72,829	143,756	1,205	2,095	2,660	3,492	6,766

Stone (including marble), and manufactures of.....							6,531	1,847	5,467	9,990	8,022
Straw and palm leaf, manufactures of.....							2,586	1,672	1,273	3,770	7,876
Sugar, molasses, and confectionery:											
Molasses and sirup.....											
Sugar, refined.....		15,205	10,201	26,358			6,893	10,632	6,940	16,703	18,012
Confectionery.....		10,255	51,841	319,392			261	563	2,810	14,928	24,189
Tin, manufactures of.....							19,142	21,346	35,245	37,420	47,251
Tobacco, and manufactures of:							18,119	9,408	21,633	17,242	20,792
Unmanufactured.....											
Manufactures of—							245	974	39,478	4,013	7,788
Cigars and cheroots.....											
Cigarettes.....	M.								625		1,989
Plug.....	M.		17						7,522	11,692	18,401
Smoking ³	pounds.	20	1,195	1,518			17,967	37,442	55,741	30,041	61,101
All other manufactures of.....	pounds.	88,685	130,599	81,013			60,040	110,322	86,562	56,796	99,321
Toys.....	do.		162,857	112,505			25,960	22,824	1,939	44	100
Trunks, valises, and traveling bags.....							7,323	2,352	42,409	63,404	27,461
Type.....	pounds.						5,846	2,159	11,215		
Vegetables:									4,525		
Beans and dried peas.....	bushels.										
Potatoes (except sweet potatoes).....	do.						12,841	21,111	24,452	18,199	41,897
Vegetables, canned.....							9,479	473	2,936	373	790
All other (including pickles and sauces).....							64,763	116,930	93,121	116,574	194,942
Wood, and manufactures of:							31,542	41,318	38,068	48,465	76,535
Logs and other round timbers ⁴	M feet.						27,402	900	5,265	16,115	31,287
Lumber—											
Boards, planks, deals, joists, and scantling.....											
Shingles.....	M feet.						255,264	206,734	282,016	239,785	322,822
Shooks—	M.						602	244	23		
Box.....	No.						1,441	936	822	3,117	1,265
All other.....	No.						100			2,000	
All other lumber.....							57,395	10,519	20,958	12,030	2,526
Doors, sash, and blinds.....							1,078	4,096	490		
Furniture.....							52,618	33,697	124,667	76,740	104,400
Trimmings, moldings, and other house finishings.....							1,414	37	526	1,144	100
All other manufactures of wood.....							37,397	78,225	48,193	44,830	54,000
Wool, and manufactures of:											
Wearing apparel.....							86,285	14,026	17,805	44,993	35,496
All other.....							12,206	23,348	22,552	40,433	23,021
Zinc, manufactures of.....							1,894	3,972	3,117	17,930	10,206
All other articles.....							110,092	117,664	158,726	183,615	271,022
Total.....							11,455,707	11,182,175	16,768,909	19,677,802	23,703,935
Shipments of foreign merchandise from United States to the Philippines.....							6,025	7,266	63,736	45,311	32,198
Grand total.....							11,461,732	11,189,441	16,832,645	19,723,113	23,736,133

¹ Included in "All other instruments and apparatus" prior to July 1, 1909.

² Included in "All other articles" from July 1, 1910, to June 30, 1911.

³ Included in "All other manufactures of tobacco" prior to July 1, 1909.

⁴ Quantity not stated prior to July 1, 1911.

FEATURES OF IMPORT TRADE.

It is difficult if not impossible to determine the extent to which the requirements of the great mass of the Philippine people enter into the over-sea commerce of the islands. Many of them supply much the greater part of their needs from the natural resources immediately at hand. On a per capita basis, the imports compare favorably with those of other countries of the same class. As shown on preceding pages, the increase in the demand of recent years has been met almost entirely by the American market, by larger shipments of the products of the United States. The shipments of wheat flour have risen from 68,000 barrels in 1908 to more than 300,000 barrels in 1912. Sixteen automobiles were sent out in 1908 and 400 in 1912. Cotton goods show a striking gain. American sales of unbleached cotton cloth rose from 136,119 yards in 1908 to 6,630,770 yards in 1912; of bleached cloth, from 14,396 yards to 15,481,853 yards; and of dyed, colored, stained, and painted cloth, from 9,758,902 yards to 46,868,396 yards. Sales of clothing, knit goods, and other wearing apparel made of cotton, increased from \$256,739 to \$1,224,340, in those five years. Shipments of iron and steel of all forms increased from \$3,473,000 to \$5,000,000. The period shows a moderate gain in the trade in boots and shoes, while the trade in meat and dairy products, notwithstanding the competition of Australasia, has grown from \$414,000 in 1908 to \$1,165,000 in 1912. The work of the Bureau of Education is probably reflected, to some extent, in a material increase in the demand for books, news print paper, and writing paper and envelopes.

Taken as groups, there has been gain in the last five years, in food-stuffs of all kinds and in all conditions, from \$1,672,500 to \$4,569,000, and in manufactures of all kinds, ready for use or consumption, from \$8,562,000 to \$16,663,000. The latter includes a multiplicity of articles, but is in part explained by the construction of railways and by other public or semipublic operations. The comparative economic independence of the people of the islands at present is indicated by the fact that, on a per capita basis, their imports of food-stuffs of all kinds are about \$2.50 a year and their imports of clothing and material for making clothing, their hats and shoes and stockings and underwear, are probably not much more than \$1.50. The imports of foodstuffs, notably rice, have of late been quite abnormal and due to an unfortunate crop situation. The rice imports of 1912 were about \$1.50 per capita. Much of the increase in the purchases in the markets of the United States is apparently due to the presence of Americans and other foreigners, resident and transient, and to industrial activity stimulated by the present government.

THE ISLAND PEOPLE AS SELLERS.

The export trade of the islands for a number of years prior to the American occupation appears to have averaged about \$20,000,000. Since 1900, according to the reports of the War Department, it has been as follows for fiscal years:

Years.	To United States.	To other countries.	Total.	Years.	To United States.	To other countries.	Total.
1900.....	\$3,522,160	\$16,228,908	\$19,751,068	1907.....	\$12,079,204	\$21,634,153	\$33,713,357
1901.....	2,572,021	20,642,927	23,214,948	1908.....	10,323,233	22,493,334	32,816,567
1902.....	7,691,743	16,235,936	23,927,679	1909.....	10,215,331	20,778,232	30,993,563
1903.....	13,863,059	19,258,721	33,121,780	1910.....	18,741,771	21,122,398	39,864,169
1904.....	11,102,775	19,147,852	30,250,627	1911.....	16,716,956	23,061,673	39,778,629
1905.....	15,668,026	16,684,589	32,352,615	1912.....	21,517,777	28,802,059	50,319,836
1906.....	11,579,411	20,337,723	31,917,134				

DISTRIBUTION OF EXPORTS.

While conditions have been materially changed by the free admission of Philippine products to this country, under the tariff act of August, 1909, the United States still takes considerably less than half of the exports of the islands. The distribution of the trade has been as follows:

Years.	United States.	United Kingdom.	France.	Germany.	Spain.	China.
1899 ¹	\$3,540,894	\$2,686,354	\$533,632	\$52,337	\$1,076,800	\$3,607,593
1900.....	3,522,160	6,225,209	1,392,439	97,348	1,226,475	1,457,161
1901.....	2,572,021	10,704,741	1,934,256	81,526	1,655,255	72,458
1902.....	7,691,743	8,282,979	955,828	75,626	868,528	342,766
1903.....	13,863,059	8,802,016	3,678,805	306,664	755,234	312,085
1904.....	11,102,775	10,123,276	2,127,365	107,144	965,511	679,692
1905.....	15,668,026	8,291,038	1,491,753	129,610	1,434,126	1,008,252
1906.....	11,579,411	7,499,627	2,703,328	459,426	1,803,055	1,705,980
1907.....	12,079,204	8,749,214	2,689,593	788,018	1,789,640	2,035,475
1908.....	10,323,233	8,870,923	3,905,878	602,085	1,719,612	1,527,604
1909.....	19,215,331	5,846,890	4,261,382	491,986	1,989,931	1,968,842
1910.....	18,741,771	5,849,419	6,485,249	896,738	1,974,112	819,579
1911.....	16,716,956	7,547,706	6,685,823	647,053	2,178,730	670,519
1912.....	21,517,777	7,481,587	10,071,013	1,752,522	2,485,661	413,061

Years.	British East Indies.	French East Indies.	Hongkong.	Japan.	Australasia.	Other countries.
1899 ¹	\$85,721	.....	(2)	\$265,573	\$453,237	\$64,771
1900.....	938,470	\$1,568	² \$2,686,168	1,032,462	564,490	607,118
1901.....	759,286	2,726	2,697,276	1,443,880	600,163	691,360
1902.....	670,819	121,758	3,183,482	925,767	437,840	370,543
1903.....	836,147	102,670	2,122,304	1,502,366	336,381	502,168
1904.....	658,421	9,419	2,102,785	1,204,514	442,696	727,029
1905.....	624,312	11,305	2,359,958	548,607	445,741	339,887
1906.....	663,487	6,335	3,658,781	532,245	462,062	843,397
1907.....	799,161	56,820	2,551,902	477,070	486,617	1,210,643
1908.....	911,767	12,345	2,436,188	491,684	528,208	1,487,040
1909.....	759,742	11,017	2,268,701	328,029	458,730	2,392,982
1910.....	886,925	10,007	1,494,892	330,919	477,859	1,896,699
1911.....	1,057,996	10,388	874,700	372,457	480,493	2,535,808
1912.....	1,169,400	8,919	994,649	1,189,826	496,485	2,738,936

¹ Aug. 20, 1898, to June 30, 1899.

² Included in China prior to January, 1900.

PRINCIPAL EXPORTS—COPRA.

The figures of the export trade of the islands are materially affected by more or less frequent change in commodity prices. Thus, in 1903 there were exported 130,000 tons of manila hemp, valued at \$21,700,000, while the 151,000 tons exported in 1912 brought only \$16,300,000. On the other hand, the price of copra

appears to have practically doubled in the last 10 years. The shipment of 1903 was 215,193,333 pounds, valued at \$4,473,029, while the shipment of 1912 was 373,332,423 pounds, valued at \$16,514,749.

In 1912 copra, for the first time, took the leading position in the export trade of the islands. This is due in part to price and in part to quantity. The shipments of the last three years, their weight and value, and their destination, have been thus:

Exported to—	1910		1911		1912	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
United States.....	12,209,856	\$447,145	26,985,518	\$1,030,481	53,263,200	\$2,339,144
United Kingdom.....	4,160,974	147,328	11,816,557	471,931	6,933,293	274,411
Austria-Hungary.....					111,553	4,400
Belgium.....	2,911,201	114,850	12,121,236	498,330	21,236,460	957,619
France.....	168,830,575	6,114,324	158,745,323	6,140,343	214,031,464	9,585,931
Germany.....	19,427,365	702,027	7,299,581	313,907	32,803,639	1,431,541
Italy.....	13,971,873	470,200	4,425,499	169,445	10,552,686	498,207
Netherlands.....			439,842	19,927		
Spain.....	22,914,363	792,161	22,867,654	878,350	22,198,463	944,000
Mexico.....			220,140	8,800	447,252	18,560
East Indies, British.....	9,394,794	352,316	9,374,799	345,306	10,781,197	418,371
Hongkong.....			11,323	484	114,531	5,051
Japan.....	335,981	13,600	548,723	22,103	858,685	37,514
Total.....	254,156,982	9,153,951	254,856,195	9,899,457	373,332,423	16,514,749

Shipments to the United States are beginning to assume respectable proportions. In 1903 they were valued at a little more than \$9,000. In 1907 the value was about \$60,000, and since that year the increase has been rapid. There is no commercial reason why we should not, and there are many reasons why we should, bring this commodity from the islands in even greatly enlarged quantity. As shown above, France is now the largest purchaser. It is, however, probable that the methods of the industry will be changed, that the material will be prepared and treated in the islands, and the finished product, oil, be exported instead of the copra.

HEMP.

In the product known in the market as manila hemp, the islands have a monopoly due to peculiar conditions of soil and climate. This product has hitherto and for many years been the leading specialty of the islands. The output is somewhat irregular and recent years have seen a very heavy decline in prices. The average price of the last three years has been barely more than \$100 a ton, while the average price in 1907 was \$187 and in 1908 \$152. Recent months have shown a price advance which may or may not continue. The decline is due to competition with sisal, which, for many purposes, has taken the place of manila hemp, at lower prices. Sisal will not, however, crowd the Philippine fiber entirely out of the market, as there are uses for which nothing now known can be substituted. A possibility of its restoration to a dominant position lies in the discovery of some mechanical appliance that will extract the fiber now obtained chiefly by hand processes that are crude and wasteful. If such a device can be invented, the price of manila hemp might be reduced to a basis of successful competition with sisal in many fields

in which the latter is now almost exclusively employed. In such a case the output could be increased to meet any possible requirement of the market. The shipments of the last three fiscal years have been thus:

Exported to—	1910		1911		1912	
	Long tons.	Value.	Long tons.	Value.	Long tons.	Value.
United States.....	97,737	\$10,399,397	65,494	\$7,410,373	68,474	\$7,751,489
United Kingdom.....	56,263	5,458,131	76,771	6,761,147	65,093	6,338,673
Austria-Hungary.....	446	46,383	457	39,033	152	15,489
Belgium.....	1,961	212,272	3,582	334,497	1,557	183,955
France.....	610	54,819	1,260	104,084	577	57,721
Germany.....	1,549	138,057	2,596	223,989	1,008	102,336
Italy.....	703	121,296	1,052	93,851	654	60,393
Netherlands.....	1,459	145,398	3,047	261,875	1,317	134,500
Spain.....	210	19,985	205	19,288	181	17,355
Switzerland.....	14	14,564				
Canada.....			502	60,247	473	56,840
China.....				26		15
East Indies, British.....	1,329	128,832	1,450	131,467	1,604	153,467
Hongkong.....	1,548	199,637	1,228	123,203	2,976	289,667
Japan.....	1,576	181,549	2,336	301,355	4,504	834,296
Australasia.....	2,685	284,602	3,053	276,905	2,984	287,314
Total.....	168,090	17,404,922	163,033	16,141,340	151,554	16,283,510

The invention of a device reasonably successful in the extraction of this fiber would incidentally increase the purchasing power of the islands many millions of dollars. At the prices that have prevailed for several years the industry offers little or no inducement to either capital or labor. The United States and the United Kingdom are the markets in which most of the supply is sold.

SUGAR.

Sugar holds the third place on the list of the exports of the islands. Prior to the passage of the tariff act of August, 1909, the sugar exports amounted to somewhat less than \$5,000,000 a year on the average. By that bill sugar from the islands is admitted free into the United States to the amount of 300,000 gross tons annually. This has greatly stimulated the industry, although the maximum allowance has not yet been reached. Formerly the principal markets for the product were China and Hongkong. The business of the last three fiscal years has been as follows:

Exported to—	1910		1911		1912	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
United States.....	207,575,559	\$5,495,797	284,231,263	\$7,144,755	356,666,204	\$9,142,833
United Kingdom.....					18,673,677	561,306
China.....	27,987,014	645,113	22,857,248	459,938	8,950,021	164,805
East Indies, British.....	24,517	617	21,668	590	4,469	139
Hongkong.....	40,252,367	791,120	22,205,152	409,077	17,147,994	351,603
Japan.....	5,725,534	108,043			8,645,546	179,745
Guam.....					4,041	150
Total.....	281,564,991	7,040,690	329,315,331	8,014,360	410,091,952	10,400,575

TOBACCO.

Tobacco ranks fourth on the export list. This industry, like the sugar industry, has been materially increased by the provision of the tariff act admitting to the United States free of duty up to a maximum of 300,000 pounds of mixed wrapper and filler tobacco, filler tobacco up to 1,000,000 pounds, and cigars up to 150,000,000. Prior to the passage of the bill the exports of tobacco in all forms averaged less than \$3,000,000 a year. The sales of 1912 amounted to \$4,600,000. The trade is widely scattered. More than 20 countries are reported as buyers of the \$1,842,414 worth of leaf tobacco in 1912—from Korea, a buyer of \$6 worth, to Spain, a buyer of \$1,450,000 worth. Only a comparatively small quantity of leaf, about \$1,500 worth in 1912, comes to the United States, although this country bought, in 1912, 257,078 pounds of “other unmanufactured tobacco” out of a total shipment of 417,372 pounds.

More than 40 countries are reported as buyers of Philippine cigars in larger or smaller quantities. The shipments of 1908, 1909, 1910, 1911, and 1912 were valued at, respectively, \$1,084,196, \$1,083,702, \$2,973,630, \$1,700,712, and \$2,660,061. In 1908 sales to the United States amounted to \$21,781 and in 1912 to \$1,520,754. At that they did not reach one-half of the allowance under the tariff. Much the greater part of the remainder of the exports finds a market in China, Hongkong, the British East Indies, and Australasia. The United Kingdom takes about \$100,000 worth yearly, Hawaii nearly as much, Spain nearly \$50,000 worth, with the remainder going in comparatively small quantities to many markets. The cigarette trade averages about \$35,000 and is widely distributed.

Thus far the exportable tobacco, either as leaf or manufactured, has come from a somewhat limited area in northern Luzon. While the output can be greatly increased, there seems no danger that this country will ever be swamped with Philippine cigars.

FIBERS AND OTHER ARTICLES.

A rapidly expanding business appears in the exportation of vegetable fibers and manufactures thereof, other than the shipments of manila hemp. The export trade in hats of bamboo and other fibers amounted to \$157,000 in 1908 and to more than \$500,000 in 1912. Nearly 1,200,000 Philippine hats, of an export value of more than \$300,000, came to this country in the fiscal year 1912. Germany is a buyer of about \$90,000 worth, and the remainder are scattered through Europe and Asia. A modest trade is being developed in this country in the fiber cloths of the islands, in piña, jusi, and sinamay. An export business averaging \$600,000 a year is reported under the head of “All other manufactures of vegetable fibers, etc.” Shipments of these fibers and fiber products amounted to \$275,000 in 1908 and to more than \$1,400,000 in 1912.

Other export articles and their value are reported for 1912 as follows: Tortoise and other shells, \$286,818, chiefly to the British East Indies; maguey, \$320,791, to the United Kingdom, United States, Japan, and elsewhere; ilang-ilang oil, \$80,879, largely to

France and the United States; mother-of-pearl shells, \$178,224, largely to the British East Indies; gum copal, \$51,936, to the same market; bêche de mer, \$52,000, to Hongkong and the British East Indies; lumber, \$63,455, chiefly to the United States.

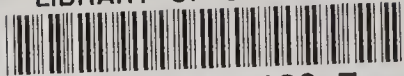
Three items, copra, hemp, and sugar, in 1912 represented \$47,000,000 out of total exports of \$50,000,000. While the trade in some of the other lines can be materially increased, these three articles appear as the backbone of Philippine commerce. With the expansion of the copra, hemp, and sugar industries there should and doubtless will come an increase in imports, the result of an enlarged purchasing power. Should they for any reason show contraction, a reduction in the volume of imports may be looked for. For their great development capital and business system are necessary. They will grow under the present modifications of the old methods of production, but they can not be expected to grow with great rapidity.

IMPORTS FROM PHILIPPINES INTO THE UNITED STATES.

The table following gives the imports into the United States from the islands, as reported by the Bureau of Foreign and Domestic Commerce of the Department of Commerce and Labor.

Articles.	Quantity.					Value.				
	1908	1909	1910	1911	1912	1908	1909	1910	1911	1912
Gums:										
Copal, kauri, and damar.....pounds..								\$32,954	\$14,128	\$253
All other.....	466,652	767,992	714,849	331,600	5,265	133	226	1,289	152	1,873
Fibers, vegetable, and textile grasses, and manufactures of, n. e. s.:										
Unmanufactured—										
Manila.....tons..	52,233	61,622	92,507	74,219	66,923	8,922,890	7,127,187	10,435,743	8,614,603	7,826,078
All other.....tons..	788	234	2,792	492	690	79,748	18,120	157,820	38,655	49,002
Manufactures of—										
Fabrics, woven, n. e. s., of flax, hemp, or ramie.....square yards..	111	2,119	4,309	1,863	1,644	36	791	1,206	534	377
Laces, edgings, embroideries, neck ruffings, ruchings, trimmings, etc.....								2,211	1,183	1,845
All other.....						4,411	6,124	1,062	382	322
Nuts:										
Coconuts, in shells.....									13,766	2,498
Coconut meat, broken or copra, not shredded, desiccated, or prepared.....pounds..	6,651,184	9,435,769	10,783,131	22,207,280	46,673,718	213,999	273,497	416,074	888,675	2,064,279
All other.....						30	95	75	1,352	4,443
Hats, bonnets, and hoods, composed of straw, chip, grass, palm leaf, willow, osier, or rattan.....										
Oils, vegetable.....						31,347	25,118	123,356	274	336,398
Shells, unmanufactured.....						57,467	195,085	23,655	5,125	21,765
Silk, manufactures of.....						1,459	951	733	421	7,514
Sugar, not above No. 16, Dutch standard in color: Cane.....pounds..	38,408,000	83,648,000	175,869,739	230,351,485	435,570,122	3,705	7,153	9,446	4,270	3,415
Tobacco, and manufactures of:										
Leaf.....pounds..	75	104	3			669,800	1,594,604	4,259,568	6,487,294	11,243,693
Manufactures of—						20	26	1		
Cigars, cigarettes, and cheroots.....pounds..	1,371	2,396	1,141,837	577,424	910,821	1,559	2,863	1,677,574	921,952	1,339,993
All other manufactures of.....						2	3			
Wood, and manufactures of.....						3,680	20,154	5,416	13,003	25,243
All other articles.....						86,418	98,003	125,731	273,351	251,889
Articles, the growth, produce, and manufacture of the United States, returned.....						62,409	17,879	43,983	121,278	76,319
Total.....						10,164,223	9,433,986	17,317,897	17,400,398	23,257,199

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